

APRIL 1925 ~ No 231

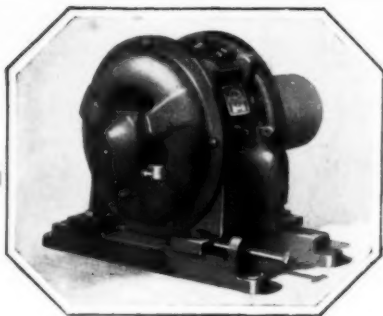
Monthly

A Reference for Buyers

Sellers Everywhere in the United States and to
Dealers in American Machinery Abroad

Published by
A.H. HITCHCOCK
1220-1235 Caxton Building
Chicago

FOR INDEXES SEE LAST PAGES



We recommend that Reliance Motors be kept clean and dry.

We know they can't be in many cases, so we put in plenty of insulation in vital spots to withstand the destructive effects of dirt and moisture.

Bulletin 5018 gives details

Reliance Electric & Engineering Co.
1063 Ivanhoe Road, Cleveland, Ohio

Branches:

Boston New York Philadelphia Pittsburgh Chicago Detroit Cincinnati Birmingham, Ala.

We specialize in motors, sizes $\frac{1}{2}$ to 200 h. p. constant and adjustable speed D. C.; squirrel cage and slip ring A. C.

Type A.A. RELIANCE
Induction Motors

HANDBOOK FOR DRILLERS



The A-B-C of Good Drilling Practice!

Thousands of copies of this booklet are mailed out annually, all over the world, to men and boys interested in knowing the "why" as well as the "how" of twist drills and drilling.

May we send you a copy? It costs you nothing but a postcard and puts you under no obligation.

Just ask for the "Handbook for Drillers."

The **CLEVELAND** **TWIST DRILL**

CLEVELAND **COMPANY**
CLEVELAND
TRADE MARK REG. U. S. PAT. OFF. AND FOREIGN COUNTRIES NEW YORK CHICAGO LONDON

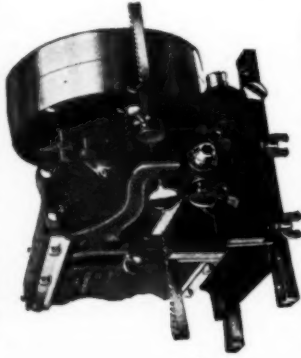
Manufacturers, also, of

Carbon and High Speed Drills for every purpose; "Mezzo" Super-Carbon Drills; Hand, Jobbers' and Shell Reamers; "Peerless" High Speed Reamers; "Paradox" Adjustable Reamers; "Quick-Set" Reamers; Chucking Reamers for Turret Lathes; Counterbores; Countersinks; Sockets; End Mills; and the "Ezy-Out" Screw Extractors.

CLE♦FORGE

TRADE MARK REG. U.S. PAT. OFF.

YOUR BRONZE BRASS OR WOOD SAWS



Model K, IN ONE OPERATION FILES and SETS medium or soft tempered bands. The most powerfully constructed machine of this type made. Used by the largest saw makers. They know. Write for specifications on same.

Write for catalog

We also make Circular Saw Filers & Grinders

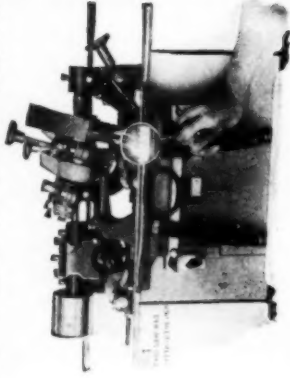
Write for FREE booklet

108 Hamilton Ave., THE WARDWELL MFG. CO., CLEVELAND, OHIO

**HOW
DO
YOU
RENEW
THEM?**

FOR 5¢

**YOU
CAN
DO IT**

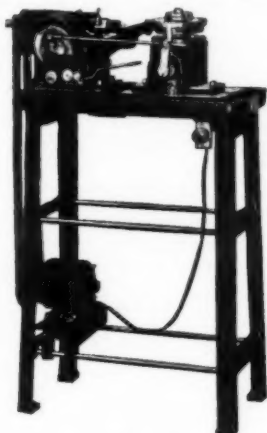


Model A-2, sharpens and salvages all hard, medium or soft tempered band saws.

By salvaging these saws your purchases can be enormously reduced. Why throw them away, when only once used?

Loading Time—Drilling Time?

WATCH THE OPERATOR in your shop on your small single hole drilling on high speed hand feed machines. With the present development of high speed spindles, do you not find it often takes longer to handle the work than to drill it?



We are Manufacturers

of the

KINGSBURY

**AUTOMATIC
SENSITIVE**

DRILL HEAD

and

Specialists

**in Full and Semi-Automatic
Drilling Machinery**

THIS KINGSBURY AUTOMATIC Sensitive High Speed Dial Feed Drilling Machine will cut the above lost time to a fraction of a second and yet drill to full capacity of the tool, the feed of which automatically adjusts itself to conditions.

It also conserves the strength of your operator by eliminating all motions but the actual loading of the work dial. Work dials are easily made and can be shifted quickly, so that the set-up expense is usually light and the machine can be used economically on comparatively short-run jobs.

In actual performance this Kingsbury cross-drills $7/32$ " diam. brass pins with No. 48 drill at 65 per minute, and $9/32$ " diam. steel pins with No. 53 drill at 20 per minute, with drill running several hours on one grinding.

Let us estimate on your work

Kingsbury Manufacturing Co.

Keene, New Hampshire

This Power Feed Miller \$220

BURKE No. 4

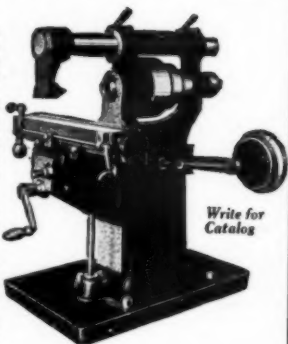
Longitudinal feed.....	8"
Traverse feed.....	4"
Vertical feed.....	8"
Table surface.....	3½"x16"

Can be equipped with Index Centers, Vertical Milling Attachment, Slotting Attachment, Draw-in Chuck Attachment, and vises with plain or swivel base or quick acting.

We make both power and hand feed machines at prices ranging from \$100 to \$220.

The BURKE MACHINE TOOL COMPANY

297 East 16th Street
CONNEAUT, OHIO



Write for
Catalog

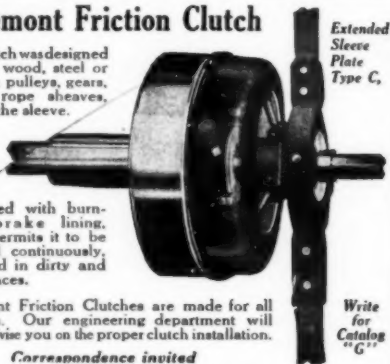
Edgemont Friction Clutch

This clutch was designed to drive wood, steel or cast iron pulleys, gears, drums, rope sheaves, etc., on the sleeve.

It is lined with burn-proof brake lining, which permits it to be operated continuously, and used in dirty and dusty places.

Edgemont Friction Clutches are made for all purposes. Our engineering department will gladly advise you on the proper clutch installation.

Correspondence invited



Extended
Sleeve
Plate
Type C,

Write
for
Catalog
"G"

Edgemont Machine Co., Inc., DAYTON, OHIO

COMPETITION IS FIERCE!

You hear that everywhere, so it's probably as true in your line as elsewhere. To meet competition you have to have low costs, or you go to the wall.

Have you a lot of obsolete, low-production machine tools in your plant? Has your competitor the better and new kind?

Competition isn't so fierce for the shop that is well equipped with modern

Machine Tools—The Master Tools of Industry

**NATIONAL
MACHINE TOOL BUILDERS'
ASSOCIATION**

"Bridgebilt" Factory Seating and Tool Racks

A diversified line to meet requirements of every branch of industry.

**The Bridgebilt line
will give long and
satisfactory service**

*For illustrated price list
and discounts write—*

**The Chicago Wire
Chair Co.**

619 No. LaSalle St., Chicago, Ill.

No. 1010-SWS



Just tear out this ad and sign your name

*You will receive our new 1925
70-page catalog with prices.*



No. 4 D S Stool
All Steel

Buyer: _____

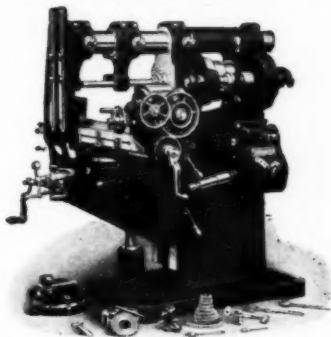
Firm: _____

Address: _____

Angle Steel Stool Co.
Plainwell, Michigan

LEBLOND

Heavy Duty Cone Type Milling Machines



LeBlond Heavy Duty Cone Type Milling Machines are simple, rugged, accurate machines best suited for the work of average shops. They are particularly adapted to tool room work and the work of jobbing or repair shops.

The one piece column, the box type knee, the exceptionally large overarm, the double friction back gear and the self aligning arbor supports are a few of the distinctive features of these machines.

They are built in a complete line of sizes, in both plain and universal styles, all described in our catalogue, which we will send to interested parties.

**THE R. K. LEBLOND MACHINE
TOOL COMPANY**
CINCINNATI, OHIO

Save Time Setting Gang Milling Cutters

Eliminate
Thin
Washers



Hardened
and
Ground

PATENTED

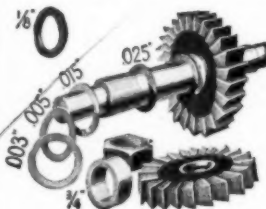
"Wear-Ever" Adjustable Spacing Collars permit setting cutters to the thousandth part of an inch without removing from the arbor.

Stock sizes for $\frac{3}{4}$ " to $2\frac{1}{2}$ " arbors, sent on approval
They are adjustable in 12 steps of $2/1000$ inches

SCULLY-JONES & CO. TOOL DIVISION
13th and Robey Streets CHICAGO, ILL.

Steel Spacing Washers—

Made of a good grade of Cold Rolled
Strip Steel, also known as Shim Steel



Stock sizes for arbors of following diameters: $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, $\frac{7}{8}$, 1, $1\frac{1}{8}$, $1\frac{1}{4}$, $1\frac{3}{8}$, $1\frac{1}{2}$, $1\frac{5}{8}$, $1\frac{3}{4}$, 2, $2\frac{1}{4}$, $2\frac{1}{2}$, 3, $3\frac{1}{2}$ and 4 in. and larger.

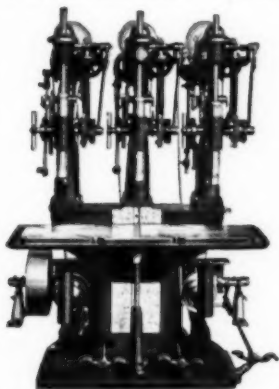
Stock thicknesses: .002, .003, .004, .005, .006, .007, .008, .010, .012, .015, .020, .025, .032, .047, .063, .093 and .125 inch.

Other thicknesses up to 3.000" made to order, with keyways if so ordered.

Ask us to send samples; you'll like them

Detroit Stamping Company
3443 West Fort St., Detroit, Mich.

Makers of Auto Parts and Agricultural Implements *Find that the "Rockford" Cuts Costs*



**It's an Up-To-Date
Automatic Gang
Drilling Machine**

*Built with
2, 3, 4 and 6
Spindles*

*Box
Column
Type*

An Investigation—of this modern machine is all we ask. You will find that the better design, the expert workmanship and the superior conveniences, all combine to guarantee you a larger output of accurate work.

Automatic Return—When each spindle has completed its operation it automatically returns to its highest position where it remains until the starting lever is tripped, when it immediately drops to position above the work.

Please Note—By removal of the stop pin in the cam, the spindle will immediately return to lowest position above work, and when tripped by automatic stop, will return to highest position and immediately drop again to work, repeating the movement automatically until the power is shut off. The spindle can be pulled ahead of the feed while in operation, a great advantage in drilling through a cored piece, piping or similar work.

We invite you to submit your drilling problems to us

Rockford Drilling Machine Co.
Rockford, Illinois

Unsurpassed Sensitiveness



Built Into Sigourney Drills

Our specialty is sensitive drill presses, built for superior service. They are speedy, accurate and long lived. Our plain bearing drills have three speeds and are equipped with *clamp stops*, instantly adjustable. Made with 1, 2, 3 and 4 spindles, and are shipped belted, ready for use. We also build ball bearing machines.

*Complete details and prices
on request*

Sigourney Tool Co.

Hartford, Conn., U. S. A.

At Last!

The Perfect Drill Chuck



THE TITAN has the best features of other drills chucks, *plus a real quick change.*

Just strike the end of drill, and out it comes. A one-armed man can do it. No separate key—no hammer or special device required. *And it uses up drills with broken tangs.*

Made in sizes No. 0 to No. 5 for any taper shank drill, counterbore, reamer or similar tool. Saves time; saves drills.

Write for descriptive price list

Titan Tool Company

Erie, Penna.

Threading 1200 pieces per Hour

These brass wing
screws shown are
being threaded on
our



Standard High Speed Tapping Machine

*Let us show you what can
be done on your work*

Leland-Gifford Co.

Worcester, Mass.,

U. S. A.





Ball Bearing Drills Plain Bearing Drills

Foot Lever Feed can be applied to
any of our SINGLE SPINDLE Drills

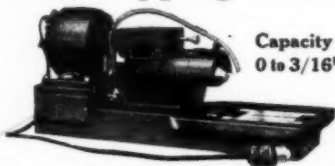
REED DRILLS are the result of our
experience of 35 years in making
good tools. Every detail has been
carefully worked out to insure
durability and efficiency—to make
them exceptional producers.

Ask for prices; they will interest you

Francis Reed Co.

43 Hammond St.
WORCESTER, MASS.

BICKNELL-THOMAS Friction Tapping Machine



Capacity
0 to 3/16"

The most simple, durable, completely equipped, compact, easiest operated
and most productive bench tapping machine built. The cone friction drive
is automatically adjusted by the pressure the operator puts on spindle, mak-
ing an extremely sensitive drive, saving time and taps and increasing output.
Furnished for either direct or alternating current.

You should have specifications; may we send them?

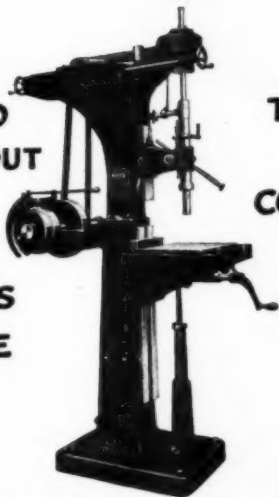
Bicknell-Thomas Company
90 Wells Street, Greenfield, Mass.

\$

GET
THE
Avey

\$

TO DO
WITHOUT
AN
AVEY
COSTS
MORE



THAN
IT
COSTS
TO
BUY
IT

\$

THE AVEY DRILLING
MACHINE CO.
CINCINNATI
OHIO

\$



Multiple Drilling

**In Any Pattern —
On a Single Spindle**

You can do so much work and cut down your drilling costs with a

U. S. Multiple Spindle Drill Head

Made regularly with 2 to 6 adjustable spindles. Special heads made to your order, with adjustable or fixed spindles.

*Let us help you make
a worth-while saving*

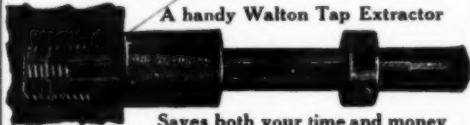
The United States Drill Head Co., 1952 W. Sixth St.,
CINCINNATI, O.

Michigan Agents—National Sales Engineering Corp., Detroit, Mich.

— and then the Tap broke!

Work was delayed—Cost increased

A handy Walton Tap Extractor



Saves both your time and money

LET US SEND you a Walton on 60 days' approval, and if you break any taps during that time, you'll never let it come back—it costs so little and it saves so much.

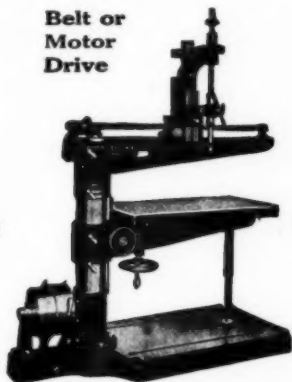
THE WALTON quickly and easily removes taps which are broken at or below the surface of the work, without injury to the threads. Sizes No. 8 to 1¼".

Shipped on 60 days' approval. Did you say "ship"?

THE WALTON CO., Hartford, Conn.

THE TAYLOR & FENN Sensitive High-Speed Radial

**Belt or
Motor
Drive**



This Great Manufacturers' Drill—

combines the speed of the sensitive with the flexibility of the radial, for practically all drilling requirements within its range. Drill the big pieces on the base and the small pieces on the table.

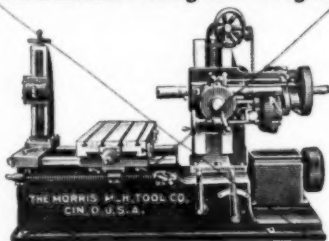
Tapping heads, power feed heads or hand lever feed heads may be used singly or in combination.

The drive is positive, through gears and silent chain. The spindle has three speeds and is bored for No. 2 Morse taper.

*A thorough investigation of this machine will repay you
We shall be glad to furnish complete data upon request*

The Taylor & Fenn Co.
Hartford, Conn., U. S. A.

You will find plenty of use for a
Morris Horizontal Drilling and Boring Machine



It will make money for you on jobbing work, in the tool room or on production work. Micrometer adjustments on the head, table and bar support, and it is built to hold its accuracy.

Our circular will tell you more about it, and the price is right

The Morris Machine Tool Co., Cincinnati, Ohio

The "Utility"

**Counterbore
 and
 Spot Facer**

*Write
 for
 Catalog*

With the Pilot
 that *cannot*
 twist off



No more broken pilots.
 No more broken cutters.
 No more trouble in removing cutters from holders.
 No more trouble with set screws coming loose.
 Cutter drive is simple and powerful, and the cutter is easily removed.
 Counterbore and spot facer troubles practically eliminated.

The J. C. Glenzer Company

6469 Epworth Boulevard
 DETROIT, MICH.

NEW PRICES

ETTCO

KEYLESS DRILL CHUCKS



PRICES

No. 1	Etteo—0 to 17/64" ...	\$ 5.50
No. 2	Etteo—0 to 25/64" ...	6.50
No. 3	Etteo—0 to 17/32" ...	9.00
No. 3½	Etteo—1/8 to 5/8"	11.00
No. 1	Morse Taper Shank...	.75
No. 2	Morse Taper Shank...	.75
No. 3	Morse Taper Shank...	1.00
No. 4	Morse Taper Shank...	1.50
½" and 41/64"	Straight Shank..	1.00

Chucks—Less 20%.

Morse Taper Shanks—Net.

ETTCO Drill Chucks are especially adapted to Electric and Air Drills. No key to lose, Chuck is Self-tightening, so drill will not slip after the work is started.

Information to equip Electric or Air Drill:—Capacity of Drill and Make.

Special Exchange Feature!

See Your Dealer or Write Us

We will allow you a special discount of 35% on exchange of chucks. We will accept any chuck from you regardless of make or condition, and replace it with a new Ettco Keyless Drill Chuck, at the above discount.

Eastern Tube & Tool Co., Inc.

580 Johnson Ave., Brooklyn, N. Y.



PREVENTS TAP BREAKAGE

On Those Tough Jobs

Many a tapping job has been a regular tap breaker, until they began to use the—

Woodstock Improved Safety Tapping Chuck

Wherever this Chuck is employed, such trouble is eliminated. It automatically releases tap the moment it binds or strikes bottom. Saves time, taps and material.

A trial order will delight you

Peter Bros. Mfg. Co., 115 Railroad St.,
ALGONQUIN, ILL.

Thor

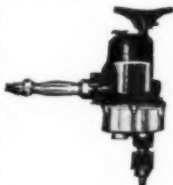
Electric Drills—

Drill More Holes In Less Time

YOU'LL find the combination of power, speed and durability in the THOR Drill just what you need to increase production. One man with a THOR can drill more holes because the THOR works faster and better.

THOR Drills are designed for greater speed in production—to bore clean cut holes easily and quickly through the hardest materials, in close quarters—anywhere in the plant. Jacobs chucks regular equipment.

To really appreciate the superior qualities of the THOR you should write for our new catalog. It shows the complete line and suggests possible savings. Get a copy now.

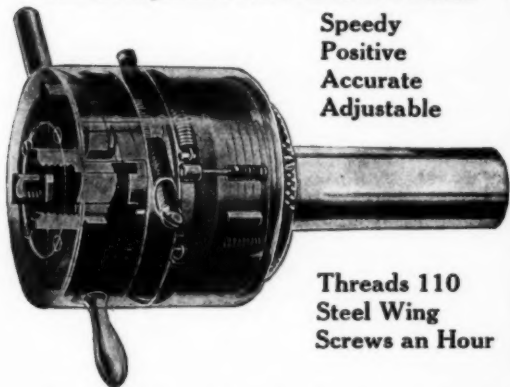


We also manufacture the
World Famous **THOR**
Pneumatic Tools

Independent Pneumatic Tool Co.
600 W. Jackson Blvd., Chicago, Ill.

No Stripped Threads Nor Broken Chasers

With the Dependable R-S Automatic Die Head



Speedy
Positive
Accurate
Adjustable

Threads 110
Steel Wing
Screws an Hour

The above is the worth-while achievement of a prominent Detroit manufacturing plant. There are also many auto plants where the R-S Die Head is used on the most exacting work, such as cutting pipe threads on water pump bodies, where a defective thread means a leak and rejection. Production in these lines is also very satisfactory.

With the R-S, chasers run in hardened ways; die is carried on two locking pins instead of the usual one, and positive opening mechanism prevents chasers sticking or acting inaccurately in any way. Threads are not stripped, and chasers are not broken.

Made in 21 sizes, and all boost production. Writing us about your threading problems incurs no obligation. Our experts will gladly make an estimate on your work.

Rickert-Shafer Co.

1110 Cherry St.,

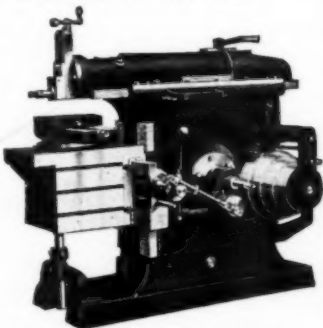
Erie, Penna.

SHAPERS

12", 14", 16"
Plain Crank,
16", 20", 25"
B. G. Crank,
either Cone
Driven or
through Speed
Box.

Belt Shifter
Regular Equip-
ment All Cone
Driven Shapers.

32" Back Gear-
ed Crank, Sin-
gle Pulley
Drive.



The Smith & Mills Co., Cincinnati, O., U.S.A.

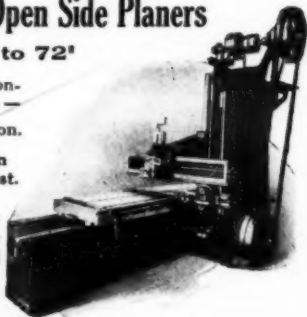
Cleveland Open Side Planers

Sizes—26' to 72'

Simplicity of Con-
struction makes —
Ease of Operation.

**High Production
At Minimum Cost.**

Over 1,000 Clev-
land Open Side
Planers Built and
Installed.



Send for Circular describing new features

The Cleveland Planer Co., 3148 Superior Ave., N. E.,
CLEVELAND, OHIO
Established in 1900

Keen Competition Demands Efficient Machine Tools

SHAPERS MILLERS LATHES

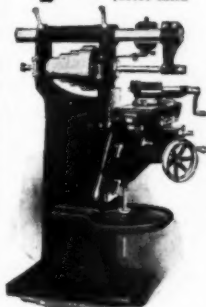
STEPTOE



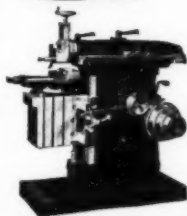
14"x6'—\$450.00
16"x6'—\$500.00
Gear Box
\$85.00 extra

Represent 80 years of accumulated knowledge and skill in the manufacture of high

grade *Medium Priced Machine Tools.*



Thousands of shops thruout the world are giving proof of the quality, durability and satisfaction which can be expected of *Steptoe* machines.



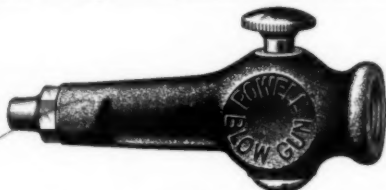
Steptoe shapers, lathes and millers are devoid of intricate parts and are practically fool proof.

Send for copy of catalogue describing and illustrating the entire line.

THE JOHN STEPTOE CO.
Stock Yards Station Cincinnati, Ohio, U. S. A.

POWELL BLOW GUN

Designed to dispense air with utmost economy.
Used for cleaning machines, machine tools and work benches.



Made with different tips for special requirements.

Circular on request.

The Wm. Powell Co.

2525 Spring Grove Ave.,

Cincinnati, O.

The BARKER GENERAL PURPOSE VISE

For Planers, Shapers, Drilling and Milling Machines



Steel faced jaws

*Graduated to swivel
any angle*

*Extra heavy for
hard usage*

The screw runs through entire length of vise, with bearing on each end. Nut at rear equalizes strain. Sizes 8" and 12" General Purpose and 16" Mold Makers' Vise. Sturdily built, and so exceptionally handy that users would not part with them. Be sure to get our literature and prices before buying.

WM. BARKER & CO.

Manufacturer of Machine Tools,

COVINGTON, KY.



WHY NOT save money
on your Shaping and Slotting?

7 in.
Shaper
Stroke



3½ in.
Slotter
Stroke

Rhodes Shaper and Slotter

Much lower priced, because it is smaller.

Reduces costs, because it's handled with greater facility on light work—just the thing for the tool room.

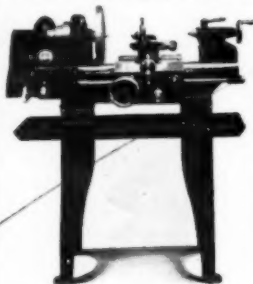
Built like the larger machines in everything but size, and furnished in combination or separate.

*Ask your dealer or write for
CATALOG H22*

The Rhodes Mfg. Company
948 Park Road, Hartford, Conn.

SHAPERS—RHODES—SLOTTERS

Monarch Jr. Lathes



are the smallest members of the Monarch lathe family. Yet they are the "biggest little lathes" built.

The Monarch line of lathes includes all sizes and types from the little 9-inch Junior lathe to the big, massive 30-in. lathe. In this line there is a lathe to fill your requirements at the price you want to pay.

Send for Catalog

The Monarch Machine Tool Co.

206 Oak Street, Sidney, Ohio

SEBASTIAN—



15" Geared Head Lathe
Single Pulley Drive
Without Motor
\$765

The knowledge, experience and skill derived from almost forty years of exclusive lathe building, has made Sebastian Lathes the standard of **QUALITY** in the medium priced lathe field.

Designed Right—Built Right—Priced Right and Guaranteed Correct

Write for details on our new Gold Seal Lathes

The Sebastian Lathe Company

1000 Culvert St.,

Cincinnati, O., U. S. A.

Seven Dollars and Fifty Cents!

The COMPLETE COST of Mounting a Motor on the "Artisan" Lathe

This charge includes the Labor, and also a proper Pulley, endless Belt and Motor-Cover.

Note the illustration below—The Motor is out of the way, fully protected, and ready to connect to the nearest light socket, just like an Electric Drill.

The prices (f. o. b. Cincinnati) follow:

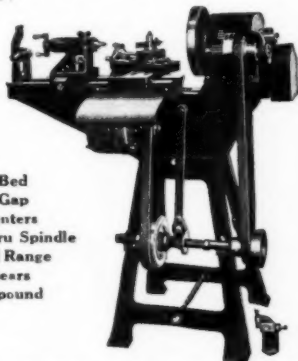
The "Artisan" Lathe, completely equipped \$170.00

½ H. P. Motor, of Proper voltage (approx.) 40.00

Mounting Motor, complete as shown..... 7.50

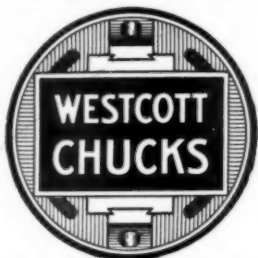
A Motor-driven Production Unit for..... \$217.50

Why gamble on a used machine of doubtful condition for any work within the unusual capacity of this up-to-date and fully guaranteed Lathe?



11" Swing over Bed
16" Swing over Gap
24" Between Centers
1 5/16" Hole thru Spindle
8 to 224 Thread Range
Quick-change Gears
Graduated Compound

Artisan Mfg. Co. Station "N"
Cincinnati, Ohio



Have Earned the Admiration and Respect of Machinists throughout the World—due to their superior QUALITY.

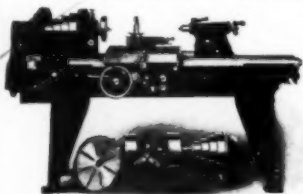
Have You a Recent Copy of Our Catalog?

WESTCOTT CHUCK CO. Walnut St.,
ONEIDA, N. Y.

Just-Rite Lathes

Have patented invisible gap without extra cost

Made in sizes from 10" to 20"



JUST-RITE in
price

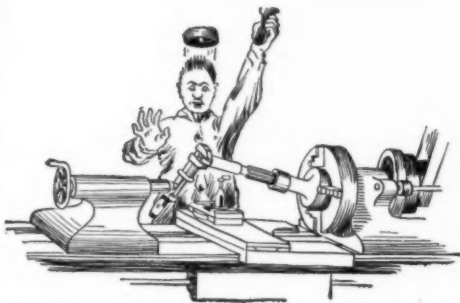
JUST-RITE in
accuracy

JUST-RITE for
your work

*Easy payment
plan if desired.*

JUST-RITE and let us show you a big saving

A. V. Carroll Machine Tool Co., Norwood,
Cincinnati, O.

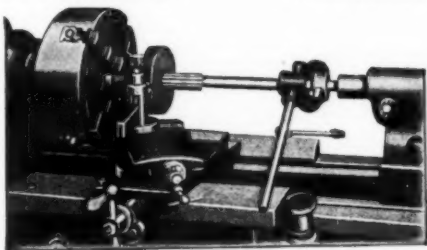


**If you ever ran a lathe it has surely happened to you.
It continues to happen daily in almost all shops.**

Until the Nicholson Reamer Holder was invented there was no other method by which a mechanic could keep his reamer from jumping in, or prevent it from reaming a tapered hole. This Holder can also be used instead of a chuck for drills and as a hold back in a lathe. It has many uses and saves double its cost in a short time. No. 1 size takes straight shank reamers and drills up to 1" dia., and No. 2 takes up to 2" in dia.

Send us sketch of socket or number of Morse taper of lathe you would like to try one on, and we will send it on trial. If you desire further information and circular, write us.

W. H. Nicholson & Company
117 Oregon Street, Wilkes-Barre, Pa.



We Carry in Stock } ALL SIZES of Collets
 } For ALL MAKES of Lathes



Hardinge Standardized Draw-in Chucks or Collets

For Bench Lathes, Engine Lathes, Tool Room Lathes,
 Bench Type Milling Machines, also Collets for Screw
 Machines. Order where you can get reliable tools from
 a reliable source of supply. Prompt shipment from stock.

*Tell us make and swing of lathe—we'll do the rest
 Also better have our Price List on hand for reference*

HARDINGE BROTHERS, Inc., 1770 Bertosa Av. Chicago, Ill.

E-Z THREAD DIAL E-Z

New device
 lowers cost
 of thread
 cutting on
 engine lathes.

For all
 size lathes.

E-Z to
 attach.

Send for
 folder.



Eliminates
 stopping or
 reversing the
 lathe.

Saves cost of
 backing belt.

Saves power
 to drive same.

E-Z to use.

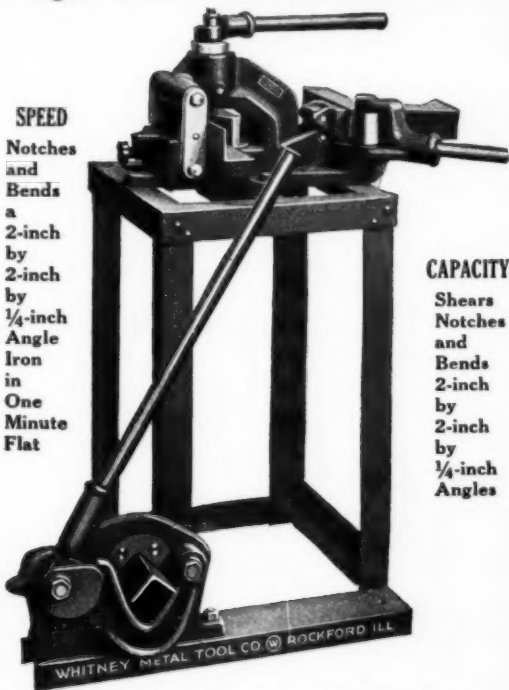
Sent on fifteen
 days' trial.

**JAMES M. COLVEN, 20 Wolfe Street,
 Yonkers, N. Y.**

Angle Iron Combination No. 455

SPEED

**Notches
and
Bends
a
2-inch
by
2-inch
by
1/4-inch
Angle
Iron
in
One
Minute
Flat**



CAPACITY

**Shears
Notches
and
Bends
2-inch
by
2-inch
by
1/4-inch
Angles**

A unit of this Angle Iron Working Machinery completes your up-to-date shop equipment. Absolutely dependable. No changing of die. Always ready to use.

Write for Prices

WHITNEY METAL TOOL CO.

95 Forbes St., Rockford, Ill.

There with the Punch

Great Power backed by
heavy rugged design enable

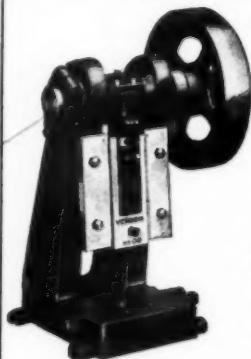
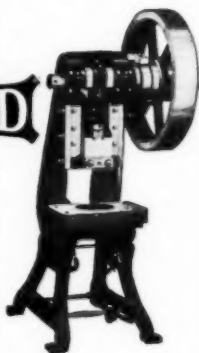
HIGH DUTY
ROCKFORD
PUNCH PRESSES

to out-punch and out-work
any press of their capacity.

Their punch-ability and
accuracy will surprise you.

Write for catalog

Rockford Iron Works
ROCKFORD, ILL.



Trade **Version** Mark

Is a symbol of
QUALITY
found only on Version
Power Presses
Arbor Presses
and
Angle Shears

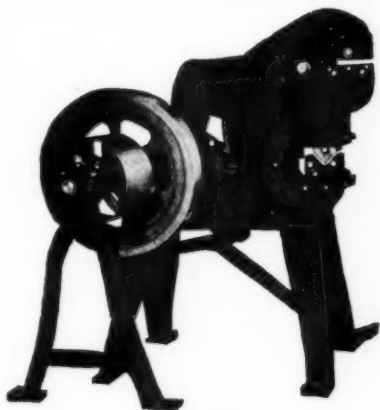
For the prevention of accidents
insist on Version presses.

They are equipped with an
Automatic Safety Clutch

Write for Circular

La Salle Machine Works

3013 S. La Salle St.,
CHICAGO, ILL.



No. 52—Built in Seven Sizes
BELOIT
Combined Power Punches and Shears
Series 51 to 56

The Beloit Combined Power Punches and Shears offer an unequalled combination of simplicity of design, construction, range of capacity, and moderate initial cost.

Invaluable in any plant for punching, shearing and fabricating steel bars or structurals.

An indispensable equipment for the manufacture of automobile springs and bumpers.

Tell us about your Punching and Shearing requirements. Our line is extensive, and we have a Beloit Machine for your work.

Send for our new catalogue No. 11 which describes the Beloit line of Punches, Shears and Bending Rolls.

Hendley & Whittemore Co.
100 S. State St., -:- -:- **BELOIT, WIS.**



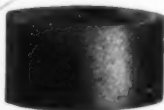
T. H. L. Punches

Are Correct

— in —

Every Detail

The material is right and they are made right. Our experience of 35 years is behind every one of them, insuring the most profitable and satisfactory service. Try them out, and you'll come again.



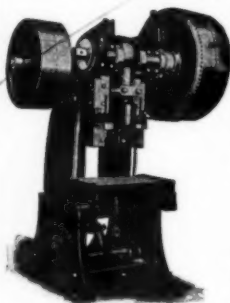
Large stock of regular sizes

Special sizes quickly made

T. H. Lewthwaite Machine Co.

417 East 31st St., (Est. 1890) New York City

A Quality Inclinable Press Backed by a Real Guarantee



A Loshbough-Jordan Press cannot be overloaded while operating within its rated speed. Any shaft or frame broken under these conditions and within year of purchase will be replaced gratis.

Many features for convenience and safety of operator; long, satisfactory service; quality and volume of output excellent.

*Let us tell you about them
—or better, let us send a
press on 30 days' trial.*

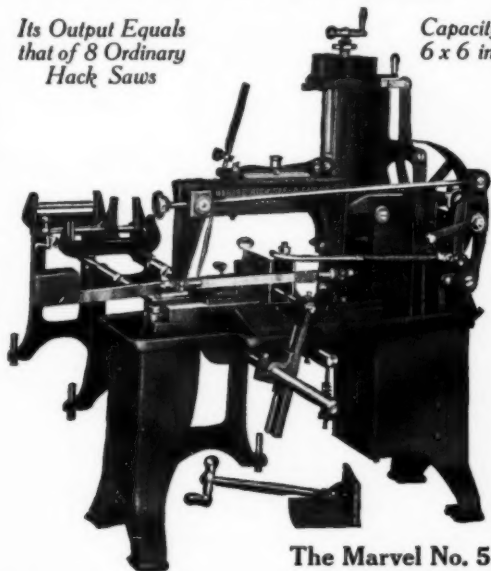
**Loshbough-Jordan
Tool & Machine Co.**
Elkhart, Ind.

Don't Think ^{of the} Common Hack Saw In Considering This Machine

It's Full Automatic. Feeds the Bar

*Its Output Equals
that of 8 Ordinary
Hack Saws*

*Capacity
6 x 6 in.*



The Marvel No. 5

This saw is entirely automatic and cuts off and piles up the duplicate pieces so fast it soon pays for itself in the saving of time, labor and blades. Don't let this opportunity pass of getting our catalog. Write us about your cutting problems.

Marvel Hack Saws for ALL needs. Write for Catalog.

Armstrong-Blum Mfg. Co.

341 N. Francisco Ave.,

Chicago, Ill.

SOMETHING NEW



**Hand Power Presses, Shears, Notchers,
Punches and Dies, Etc.**

Write for Booklet

J.F. Kidder Mfg. Co., Burlington, Vt.



Nos. 1, 2 & 5

When All Is Said

and done, you cannot beat our line
of tools for cutting sheet, bar or round
rods in iron or mild steels.

You can use our line of

Hercules' Shears and Rod Cutters

For cutting card, straw and
fibre boards, brass and cop-
per, gold and silver sheets,
and hard rubber compositions.

Catalog No. 2 on request.

W. C. & F. C. TUCKER
HARTFORD, CONN.



Plain Shears Nos. 3 & 4



YOU will save 20 to 50%
when you use Danly Die
Sets and Accessories instead
of making your own.

You do away with all bother,
delay and expense. Just
order by number from the
Danly Catalogue. More than
2500 leading concerns use
and recommend Danly Die
Sets as the best and most
economical.

Immediate shipment from stock

Die Sets — Leader Pins
Dowel Pins—Laps—Clamps



Bushings
Auto-Gages

Danly Machine Specialties, Inc.

4913 Lincoln Ave., CHICAGO

DETROIT, MICH.
1537 Temple Ave.

LONG ISLAND CITY, N. Y.
35 Wilbur Ave.



**Write nearest office for Catalogue—a reference book
for tool room and engineering office**



This Free Chart

The Correct Guide in Cutting

Your request on your letterhead will bring this authoritative chart.

RACINE "JUNIOR"

Portable High Speed Metal Cutting Machine, easily moved to any location near electric light socket. Smooth, vibrationless, need not be bolted to floor. Normal capacity 0 to 4".

Use "Racine" H. S. Wood and Metal Band Saw Blades & "Racine" H. S. Tungsten Power and Hand Hack Saw Blades. *Catalog H.*

Racine Tool & Machine Co.

1429 Junction Av., Racine, Wis.

"STANDARD THE WORLD OVER"

75% Greater Economy

With Peter's Metal Cutter

Has hack saws and files backed off the boards in both speed and economy. It's always ready to make a thin, smooth, square cut in hard steels, forming tools, drills, reamers; also tubes, rods and bars of copper, brass and aluminum. Saves time and material.

8" Size \$22.50, with C. S. Splendid for tool room. Cuts all high-speed steel up to $\frac{1}{8}$ " square.

12" Size \$60, with C. S. Cuts up to $2\frac{1}{4}$ " diameter, round or square, at any angle up to 45 degrees. Ball bearing.

15 Days' Free Trial

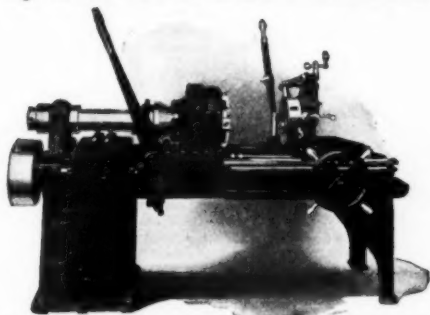
Write us or ask your dealer

PETER BROTHERS MFG. CO.

115 Railroad St., Algonquin, Ill.



Why do B & K Machines Excel?



No. 2 P D Q C—Threading and Cutting Off—Cap. $\frac{1}{4}$ " to 2"—Belt Drive

Kindly note the following —

1. B & Ks embody the general excellence of over 40 years' manufacturing experience. We have profited by the many severe tests given them under all sorts of conditions.
2. All our machines are equipped with a gear box drive for obtaining the proper threading speeds. This eliminates all uncertainty or guess work in selecting the correct speed for threading any size of pipe.
3. Dies can be changed without removing a screw, and when the die is removed, the die slot can be cleaned without the bother of removing the cover.
4. A rotary oil pump supplies oil to both the dies and cutting-off tool. The pump is gear driven, not with belt—which soon becomes oil soaked.
5. Cutting-off tool is of high speed steel, requiring no re-forging. A reaming attachment removes the burr.

Let us help you select the correct machine—17 styles and sizes

Bignall & Keeler Machine Works EDWARDSVILLE, ILL.

Sales Agents: Manning, Maxwell & Moore, New York, N. Y.

CHICAGO
BUFFALO
BOSTON
DETROIT

SYRACUSE
CLEVELAND
PITTSBURGH
PHILADELPHIA

ST. LOUIS
ATLANTA
SEATTLE
SAN FRANCISCO

"QUICKWORK"

(TRADE-NAME REGISTERED THROUGHOUT THE WORLD)

ROTARY SHEARS

MADE IN VARIOUS SIZES AND STYLES

For cutting all gauges of sheet and plate up to 1 inch thick used in building Ships, Boilers, Cars, Tanks and General Plate and Sheet Metal Work. Cut square or beveled edges in straight or irregular shapes, also cut rings and discs, and cut openings without starting in from side of sheet. Leaves the metal flatter than any other Rotary or Short Straight-Bladed Shear. Cuts a clean edge that requires no finishing.

Joggling and flanging rolls can be used interchangeably with the cutters.

Do Long Straight Cutting Faster Than Any Other Shear of Any Kind

One "QUICKWORK" does the work of a number of old style machines
Does it better and from two to ten times quicker

Eliminate Oxy-acetylene Cutting and Plate Planing

WRITE FOR CATALOG NO. 60

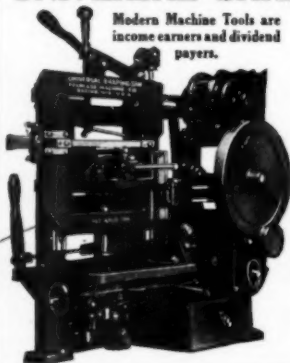
THE QUICKWORK COMPANY, St. Marys, Ohio, U. S. A.

Cable Address: "QUICKWORK" All standard codes used.

New York Exhibit: Grand Central Palace.

Agent for British Isles: Oliver Machinery Co., Manchester, England.

—PEERLESS— UNIVERSAL SHAPING SAW



Modern Machine Tools are
income earners and dividend
payers.

Latest and Most
Efficient in Hack-saws
Faster—More Accu-
rate and Economical

REDUCES

Cutting Time
Wasted Material
Blade Expense

ELIMINATES

Semi Finishing Jobs
Cap. 6"x6" & 13"x13"

PEERLESS

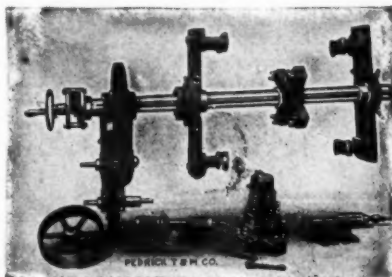
HIGH SPEED HACK-SAWS
6"x6" 9"x9" 13"x16"
Sturdy--Efficient--Reliable

Peerless Machine Co.

1609 Racine St.
Racine, Wisconsin

Write for Details

Pedrick Portable Tools



Portable Cylinder Boring Bars

For reboring in position locomotive cylinders and piston valves, cylinders of stationary engines, steam hammers, air compressors, and a wide range of other work. Often it finishes a job before it could be gotten into the shop, saving time, expense and costly delays. Its saving on work that is difficult to move is out of all proportion to its moderate cost.

As for durability, we doubt if you can wear out a Pedrick built bar. Many machines we made 25 years ago are still in use.

We also build Floor Type Boring Machines, Crank Pin Turning Machines, Pipe Benders, Portable Milling Machines, etc.

Write for copy of new catalog

Pedrick Tool & Machine Co.

3644 N. Lawrence St., Philadelphia, Pa.

Faster and Better Riveting

On a NOISELESS Machine



Speed: A rivet a second.

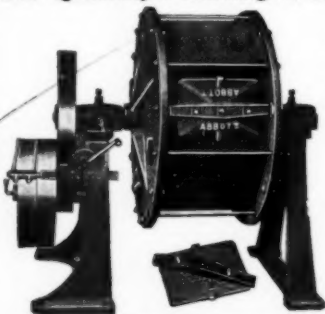
Quality: The heads are perfectly formed and highly polished, without hammer or tool marks. Simple adjustments give whatever degree of tightness or flexibility is desired.

Noiseless: The "Grant" rolls or swedges the rivet shank. There are no blows. Therefore, it makes no nerve-racking noise.

Write for Catalog and send us some of your most difficult work for riveting

The Grant Mfg. & Machine Co.
C. E. Station, Bridgeport, Conn.

Abbott Burnishing Barrel For Quantity Finishing at Lowest Cost



It polishes hundreds and thousands of small metal articles at one time.

Removes no surface metal, but burnishes and hardens it.

Gear guards, belt shifter and strainer cover are late improvements.

Prices and description?

THE ABBOTT BALL COMPANY
Elmwood District, Hartford, Conn.



DUST—

from

- Sand Blasts
- Emery Wheels
- Tumbling Mills
- Polishing Wheels

etc., etc., etc.,

—and including all kinds of heavy, flinty, gritty, grinding and cutting dust, is

Removed Most Efficiently

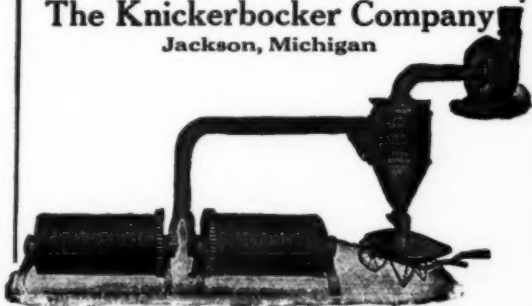
and economically with the old reliable "Rarefied" Dust Collector. Operated on the "rarefied" or partial vacuum principle, the air is drawn thru the Collector, and the dust is removed before the air reaches the fan.

The "Knickerbocker Way"

not only collects 100% of the dust, but it often uses 40% less power, and keeps repairs down to next to nothing. How's that for economy?

Let us send you a copy right now of our explanatory booklet, and a partial list of prominent, satisfied users.

The Knickerbocker Company
Jackson, Michigan





Atlas Arbor Presses

For All Forcing Operations

Illustration shows our No. 55 Power Drive Press, which is adaptable for fast production work and capable of supplying ten tons pressure.

*Write for our Bulletin—
showing 30 different sizes*

Atlas Press Co.

Department B,
Kalamazoo, Michigan

Sheldon Arbor Presses

Semi-Steel Frames.
Alloy-Steel Rams and Pinions. Heat Treated.
Large Stub Teeth.
Square Rams, carefully fitted, insuring proper alignment.

*Ask for
complete
catalogue
and
price list.*



No. 1



No. 2

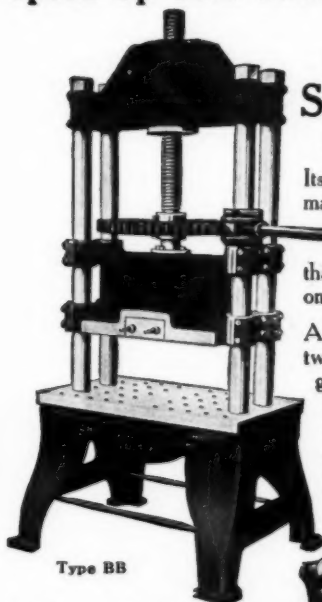


No. 3

SHELDON MACHINE COMPANY
3251 Cottage Grove Ave., CHICAGO, ILL.

Speed Up Your Tool Room Work

With This 1-Man 4-Post Screw Press 80-Ton Pressure!



Type BB

Its superior convenience makes it possible for one man to fit dies in less time than two men can do it on other machines.

Abundant room between bed and ram; gives perfect alignment between punch and die. The four sizes are sensitive, rigid and powerful. Table of Type BB is 20x36".

Surface Grinder

Is accurate, runs silently without chatter. Both feeds have graduated dial. Has all latest adjustments and attachments.

Details and prices on request

JARECKI MACHINE AND TOOL CO.

Successor to Manhattan Machine & Tool Works
Dept. A. GRAND RAPIDS, MICH.



A HIGHLY EFFICIENT BROACHING and ASSEMBLING PRESS



A good machine
at a
moderate
price

For an efficient, handy, reliable Broaching and Assembling Press, sold at a moderate price, there's nothing better than the—

18" American Vertical

It exerts a pressure up to 6 to 8 tons, has a maximum stroke of 18", and takes floor space of only 4½ ft. square.

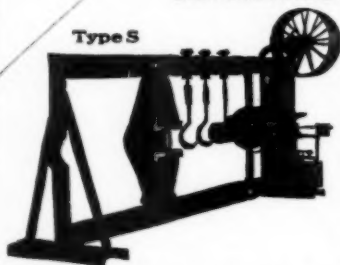
Ask us about it—today

**American Broach
and Machine Co.**

Ann Arbor, Mich.

Lourie Wheel Presses are made with—

**CAST STEEL CROSSHEADS
I-BEAM BUTTRESSES
DIFFERENTIAL PUMPS**



Type S

There are no better WHEEL PRESSES, few as good.

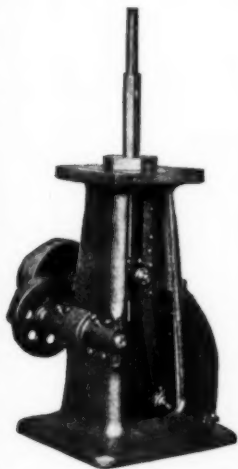
Made in any tons capacity.

Any distance between Strain Bars.

Any length of Ram Stroke.

LOURIE MFG. CO., Springfield, Ill., U.S.A.

Rapid NEW Catlin Keyseater Makes NEW Low Cost Records



*Favor us with your inquiry.
We shall be glad to mail the
interesting folder and answer
questions.*

*Popular in
Automobile Plants
Government Shops
Navy Yards
and many big
Domestic and
Foreign Factories*

Whether you need one keyseat or a thousand, the rapid "Catlin" will cut them to even better than 1000th of an inch accuracy. And its great speed explains its great economy. It cut a keyseat 6" long, 1" wide and 7/16" deep in a cast steel hub, in 3 minutes; this was in ordinary shop practice, with no attempt made to establish a record.

The picture shows the No. 1 Catlin, belt driven, with three-step cone pulley. Our other sizes, for belt or motor drive, cover practically all keyseating requirements.

Chattanooga Machinery Company
2401 Bennett Ave., Chattanooga, Tenn.

The SPIT DEVIL is a KEYSEATER

that mills keyseats true and accurate, with uniform width and depth and parallel sides. A drill press is all you have to have.

Catalog "O" will look good to you.

National Machine Tool Co.

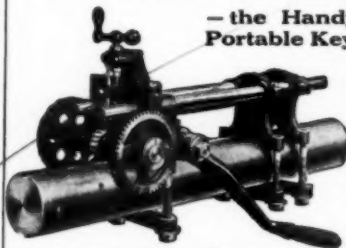
2268 Spring Grove Ave.,

Cincinnati, O.



So Valuable in Emergencies

— the Handy Burr
Portable Keyseater



You may not need it just now, but the emergency can come at any time when you would gladly give 10 times its cost to have a "Burr" at your disposal.

Cuts accurate keyways up to 12" long anywhere, in any position, in shafts up to 5" diam. Eliminates dismantling. Operates by hand or power. Choice of seven sizes.

Over 9,000 in use. Order yours today!

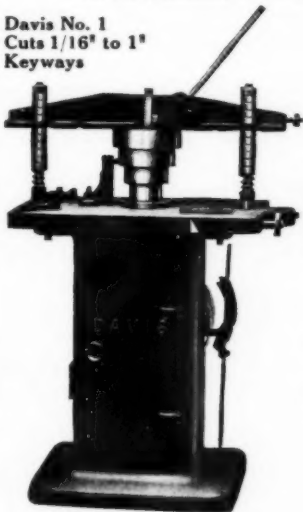
JOHN T. BURR & SON

422 Kent Ave., Brooklyn, N. Y.

THE DAVIS KEYSEATER

For Economical Production

Davis No. 1
Cuts $1/16"$ to $1"$
Keyways



For cutting
keyways in
pulleys,
gear blanks,
bell cranks,
crank handles,
etc., etc.,
and for
slotting,
oil grooving
and work
of similar
character

Cutting Keyway in Cone Pulley

Its simplicity, the absence of complicated parts to get out of order, and its ease of operation are important factors in the rapid and economical production of the Davis Keyseater.

Write for folder, which describes it fully, with a table of cutting time which is quite interesting.

Davis Keyseater Company

255½ Mill St., Rochester, N. Y., U.S.A.



Style "WC"



Style "O"



The Hinge



Style "G"



Style "A"

Gits Gravity and Wire Wick Feed Oilers

Gravity Feed—flushes the bearing.

Wire Wick Feed—gives desired prolonged feed.

Wire Wick—replaces waste or felt.

Made in Standard sizes.



Style "L"

Write for Catalog No. 20

Showing 255 full size illustrations with detail dimensions.



Style "U"

GITS OIL CUPS

Oil cups for every lubricating need. State style and size in which you are interested, and we will send free samples and catalog.



Style "T"

GITS BROS. MFG. CO

1940 SO. KILBOURN AVE., CHICAGO

A Profit of 500% a Year

Built Since 1887

Better now than ever



TOWSLEY TRUCKS

Are made in every style for every need. Efficiency experts say they pay for themselves every two or three months.

Write us for details of big truck profits

John T. Towsley Mfg. Co., Cincinnati, Ohio



All Types Keys



CRANKSHAFTS

Forged or Finished

CONNECTING RODS

Forged or Finished

MACHINE KEYS

Quick delivery—ready to drive

WOODRUFF KEYS

Ship from Stock

TAPER PINS

Ship from Stock

Send us your inquiries

Wm. Leard Co.

6th Ave.

New Brighton, Pa.

Model "25"

In a
Leather Case
with
Universal
Attachments

**Only
\$10.**



FEDERAL Dial Indicator

Adjusts instantly to any desired position on a surface or height gauge; also for checking lathe, miller, grinder, shaper or planer work.

Send for our complete catalog of Dial Indicators, Cylinder Gauges, Comparators, Thickness Gauges, Piston Gauges, Rubber Gauges, Piston Pin Gauges, Fabric Gauges, Paper Gauges, Wire Gauges, Piston Ring Gauges, Thread Lead Gauges.

Federal Products Corporation

On a Surface Gauge Elbow & Chestnut Sts., Providence, R. I.

Compact—Sensitive—Accurate—Durable The "ATLAS JUNIOR" INDICATOR

Reads over a range of 0.055"—at a glance. Dial may be set at zero after adjusting to work. Contact point can be locked in position for inspecting. Keep it in your pocket and use it anywhere. Details?

PRICE \$7.50



Sold by Dealers or Direct

WALLACE BROS.

160 N. Wells St., Dept. B.B. CHICAGO, ILL.



100% inspection testing of small case-hardened parts by 5 girls at the Monroe Calculating Machine Co., where they continuously operate five

ROCKWELL HARDNESS TESTERS

If you have especially small pieces read this from another maker of intricate machines:

The most interesting thing that we can think of in connection with our use of the Rockwell Hardness Tester is that we use it for testing the hardness of a great many unusually small parts.

Yours very truly,

ELLIOTT-FISHER CO., HARRISBURG, PA.

WILSON-MAEULEN COMPANY INC

Our men all over the country have demonstration testers

St. Mary's St. & Concord Ave., New York City

Patented
Jan. 30, 1917



New "AUTEX" Extension Reel 1925 Model

Don't Forget the Swivel Joint Feature

Permits of carrying the lamp
in any direction.

Type 6 Rapidly finding a place in large
Industrial Plants, Machine
Shops and Service Stations.

Now equipped with Belden Rubber Cord
Approved by the Underwriters

Write for descriptive circular

The Cincinnati Specialty Mfg. Co., Inc.
1903 Powers St., Cincinnati, Ohio

Over 100 Shapes and Sizes of Armstrong Tool Holders

SAVE h. s. Steel, 90%; Grinding, 70%; Forging, 100%



STRAIGHT SHANK TURNING TOOL



We also make — all of Armstrong quality —

Ratchet Drills
Drilling Posts
Drill Drifts
Drill Vises

Lathe Dogs
Clamps
Wrenches
Planer Jacks

Bolt Drivers
Tool Posts
Drill Sleeves
and Sockets

Glad to mail you the Catalogs; write for them

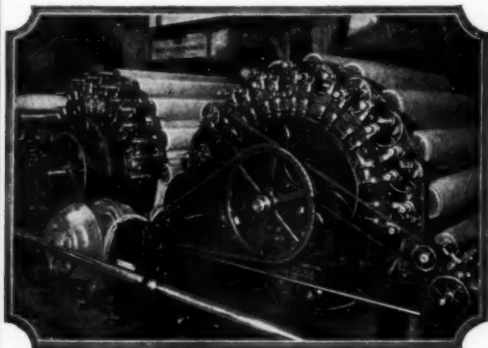
Armstrong Bros. Tool Co.

"THE TOOL HOLDER PEOPLE"

308 N. Francisco Ave., Chicago

"WHITNEY"

Silent Chain Drives



This Double Finisher is driven by two "WHITNEY" Silent Chains, from one motor—at the same time.

Increased production at lower
up-keep costs.

Let us fit the drive to the job

THE WHITNEY MFG. CO., - HARTFORD, CONN.

NEW YORK
L. C. Biglow & Co., Inc.
243 W. 55th St.

PITTSBURGH
Pittsburgh Gear & Mch. Co.
27th & Smallman Sts.

CHICAGO
E. H. Huntington
215 Machinery Hall

BOSTON
George C. Steil
727-A Boylston St.

SYRACUSE, N. Y.
George McPherson
201 Norwood Ave.

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**Are you a user of Universal Joints?
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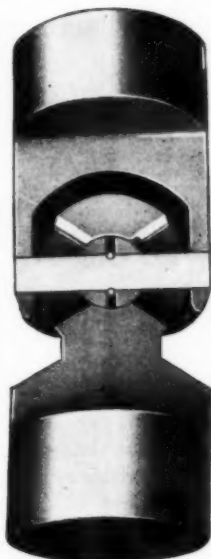
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Require Very Little Attention
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Cut your repair cost and increase your production, by using Apex Universal Joints on your Multiple Spindle Drilling and Tapping Machines.

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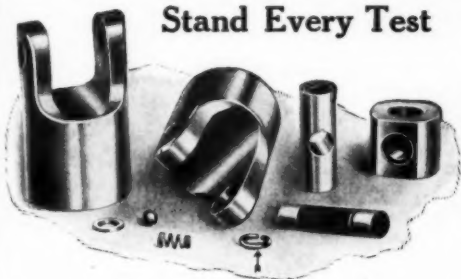
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Stand Every Test



Simplicity of *Construction*

coupled with absolute perfection of every manufacturing detail characterizes Curtis Universal Joints.

That's why they are known everywhere as joints of exceptional

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Stocked in Standard Sizes at
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Capacities from $\frac{1}{4}$ to 20 Tons.

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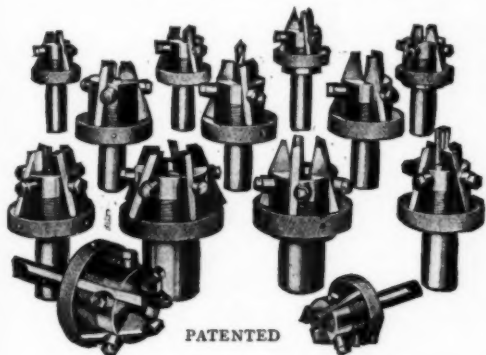
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Spindles are hardened, glass hard, so they do not become indented or lose accuracy. Chilled iron discs; especially sensitive bearings.

"Swing"	20"	40"	60"	72"	96"	72"
Greatest distance bet. standards.	20"	30"	30"	66"	88"	20'
Capacity in lbs.	1000	2000	2000	5000	10000	24000
Approx. shipping weight	45	90	150	350	650	
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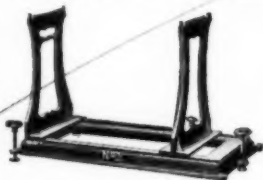
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an absolutely level and solid "Way" is necessary

Bowsher "Balancing Ways"



are brought to an absolute *level* in ten seconds. No revolving parts.

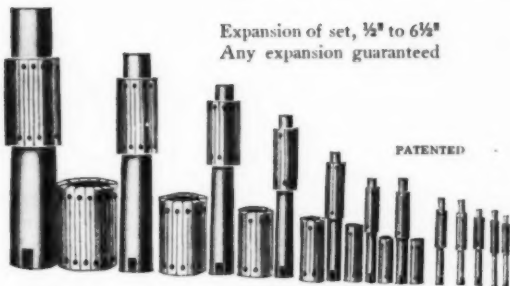
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Standards adjustable to suit length of arbor.

Three sizes for floor—one for bench use

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Any expansion guaranteed

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One set of 12 will fill by thousandths any inside diameter from $\frac{1}{2}$ to $6\frac{1}{2}$ inches.

They are the last word in efficiency—in the saving of time and tool cost—and are a practical necessity to every machinist.

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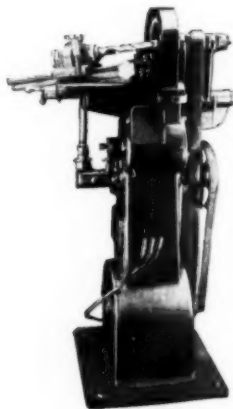
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Improperly ground
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They cut slowly and
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Automatic grinding
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The Oliver of Adams
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Whether you operate
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You will produce work at
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Not a substitute for the diamond, but built on
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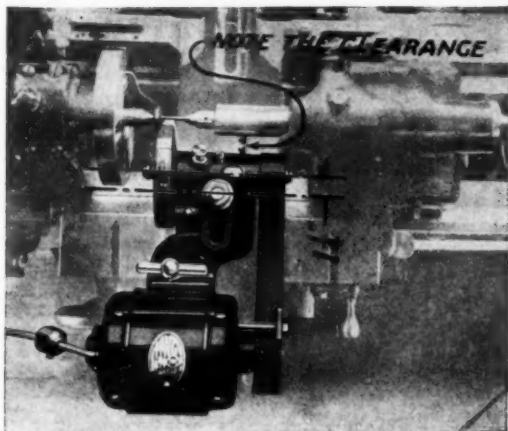
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The Smallest Piece can be Ground Between Centers

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For Internal and External Grinding

It has the sturdy construction to meet every demand, yet is light enough to be portable and usable on the various machine tools in your plant.

Built on a precision basis, it is particularly valuable where the allowable limits are held inside of tens of thousandths of an inch.

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Thompson 10'x36' Universal

Does plain, surface, edge, die and cutter grinding like single-purpose machines.

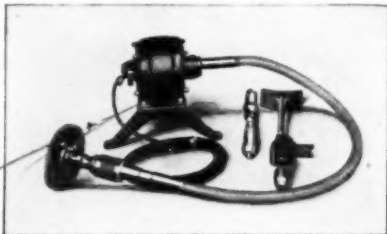
The work adjusts to a fixed grinding wheel — an exclusive feature that's better.

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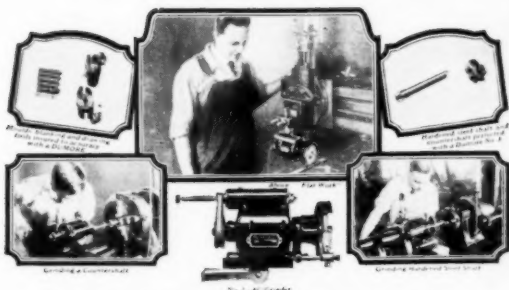
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Wisconsin Electric Co., 43 Sixteenth St., Racine, Wis.

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AUTO REPAIR SHOPS

The Whitney Cylinder Grinder Will Make Money
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The grinding wheel travels in a true circle and grinds off only enough to make a hole that is round and straight. This machine does the work right and does it quick. That's why you can do a profitable business with a Whitney.

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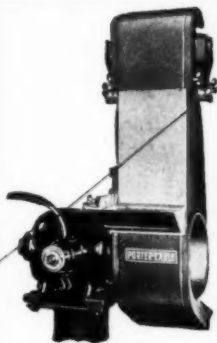
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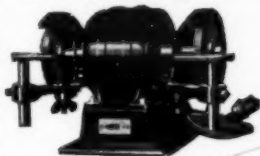
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—placed in every department of your plant, will save your being robbed by dull tools.

MECHANICS like to handle "Bodines," and if you will place them throughout your plant so one is handy to every workman, production will never slump from dull tools.

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With All Overhead Works Eliminated



GRAND RAPIDS No. 3 & No. 4 Universal Grinders
are furnished either hand feed or power feed,
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43"x17'4" Bement-Miles.
37"x14" Johnson d. b. g., q. c. f., t. a.
32"x12" Pittsburgh, heavy duty, q. c. g.
27"x12" Blaird.
26"x11" Wickes, q. c. g.
28"x10" Niles, q. c. g.,
25"x14" Hendey, q. c. g., taper attach-
ment, oil pan, (2).
24"x14" Porter.

21"x8' LeBlond.
20"x8'6" Walcott, d. b. g., q. c. g., (2).
20"x8' Whitcomb Blaisdell, q. c. g.
19"x10" Draper, patent head.
18"x8' Davis, q. c., d. b. g.
18"x7' Chard, d. b. g., semi q. c. g.
18"x6" to 8' lathes, (6).
16"x8' Greaves & Klusman, b. g., t. a.
And many others.

TURRET LATHES.

3"x28" Pond, triangle.
3"x36" Pratt & Whitney, hollow hex.
20" Acme flat, 2 1/2", h. s. motor drive.
20"x7'6" Pratt & Whitney, back grd.
20"x7" Bridgeport, 2 1/2" h. s.
19"x7' Fay & Scott, back grd.
No. 22 1/2" Garvin Monitor.

No. 3 Kemp Smith.
14"x6" Warner & Swasey.
16"x6" Johnson, back grd.
No. 3 Bardons & Oliver back grd.
14"x5'3" Pratt & Whitney, (2).
No. 3 Foster Kimball.

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42" Gang radial, s. p. speed box.
40" Barnes horizontal radials, (2).
36" Bickford radial, circular base,
motor driven.
28" Rockford, q. c. g. feed (2).

14" 6-spindle Allen sensitive.
Henry & Wright sensitive.
Plain drills, all sizes.
Drill presses, assorted sizes.

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38"x6" Ingersoll horizontal slab.
No. 5 Cincinnati, table 9'x50 1/2".
No. 15 Garvin, table 12x42".
No. 3 Becker Bramard, table 12x40".
No. 3 Hendey-Norton, q. c. g.

No. 0Y Brown & Sharpe plain, (2).
No. 5-C Becker vert., rotary table.
No. 5-B Becker vert., table 14x43.
No. 7-H Lincoln type Becker miller.

PLANERS AND SHAPERS.

12"x10'x25" Sellers planer, 4 heads.
30"x30'x8" Hewes & Phillips planer.
30"x30'x8" Putnam planer.
26 1/2"x28"x6" Hendey planer.

24"x24'x6" Sellers planer.
48" Morton draw-cut shaper.
39" Pedrick & Ayer, open side.
14" Warren shaper.

MISCELLANEOUS.

Band metal saw, 6x6 Napier.
Boring mill, car wheel, 60" Newton.
Boring mill, 38" Baush & Harris
vertical, double head.
Boring, drilling and milling machine,
17 1/2" Bement Niles horizontal.
Centering machine, 4" Whiton.
Grinder, 13 1/2"x5" Landis universal.
Grinder, No. 1 Norton universal.
Grinder, disc, No. 17 Besly.
Grinder, disc, No. 1 Besly.
Hammer, 15 lb. Bradley helve.
Hammer, 25 lb. Little Giant, m. d.
Hammer, 40 lb. Bradley, helve.
Hammer, 60 lb. Hotchkiss.

Hammers, 60 lb. Bellefonte upright; 2
Hammer, 500 lb. Merrill board drop.
Hammer, 750 Merrill, board drop.
Hammer, 1000 lb. Merrill board drop.
Hammer, 1250 lb. Bell steam.
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Punch presses, all sizes, (55).
Punch & shear, Industrial Wks. d. e.,
capacity 1" in 1", squaring 1"x6".
Riveter, air, 6" gap Allen, cap 1 1/2".
Riveter, air, 25" gap Allen, cap 1 1/2".
Slotter, 14" Niles.
Tooth rounding mche., Schuehardt
& Schutte.

Large assortment of General Machinery. Send for Complete Price List.

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FOR SALE BY

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Located at our various factories

A Partial List of the Machines is given herewith

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| 10"x 5' Pratt & W., toolmakers'. | 30"x14' Pond, quick change. |
| 14"x 6' Pratt & Whitney. | 32"x17' Pond, triple geared. |
| 14"x 8' Pratt & Whitney. | 32"x67' Bement, triple grd., mtr. |
| 16"x 8' Pratt & Whitney. | 36"x12' Pond, triple grd., motor dr. |
| 16" Pratt & Whitney toolroom. | 36"x17' Pond, triple grd., motor dr. |
| 17"x 8' LeBlond, motor drive. | 38"x28' Bement, triple geared. |
| 18"x10' Bement. | 38"x76' Bement shafting lathe. |
| 20"x12' Bement. | 48"x28' Niles, triple geared. |
| 21"x10' LeBlond, motor drive. | 60"x44' Pond, motor drive. |
| 24"x14' Pond, quick change. | 24"x26" Pratt & W. turret lathe. |
| 26"x10' Pond, motor drive. | 3"x36" Pratt & W. turret lathe. |
| 26"x16' Pond, quick change. | 32" Pond rigid turret lathe. |

PLANERS.

- | | |
|---|---|
| 24"x24"x 6' Whitcomb. | 42"x42"x26' heavy Pond planer, 4 |
| 24"x24"x10' Whitcomb. | heads, reversing motor drive. |
| 26"x26"x 6' Gray. | 54"x54"x18' Pond, 4 hds., rev. mtr. dr. |
| 30"x30"x 6' Pond, 2 hds., rev. mtr. dr. | 60"x60"x20' Niles, 3 hds., parallel dr. |
| 30"x30"x12' Pond, 2 hds., rev. mtr. dr. | 60"x60"x20' Pond, 4 hds., rev. mtr. dr. |
| 36"x36"x12' Bement, 4 hds., paral. dr. | 72"x60"x14' Bement, 4 heads, reversing motor drive. |
| 36"x36"x14' heavy Pond planer, 4 | 96"x84"x42' Bement, 5 heads, reversing motor drive. |
| heads, reversing motor drive. | 120"x120"x36' Betts, 4 heads, motor drive thru belts. |
| 36"x36"x24' Bement, 4 hds., paral. dr. | 143"x96"x36' Bement, 5 hds., r. m. d. |
| 38"x38"x12' Niles, 4 hds., parallel dr. | |
| 42"x42"x18' Pond, 4 hds., parallel dr. | |
| 48"x48"x20' Pond, 4 hds., rev. mtr. dr. | |

SHAPERS AND SLOTTERS.

- | | |
|--|-----------------------------------|
| 17" Bement dbl. trav. hd. shaper. | 10" Bement slotter. |
| 22" Bement single traveling head shaper, motor driven. | 15" Bement slotter, motor driven. |
| 6" Bement slotter. | 21" Bement slotter. |
| | 30" Bement slotter, motor driven. |

MILLING MACHINES.

- | | |
|---|-----------------------------------|
| No. 3 Brown & Sharpe plain. motor driven. | No. 5 Brown & Sharpe vertical. |
| No. 3 LeBlond plain, single pulley. | 6"x48" Pratt & W. thread miller. |
| No. 3 Cincinnati, vert., m. d. | 6"x80" Pratt & W. thread miller. |
| No. 5 Brown & Sharpe plain. | 6"x132" Pratt & W. thread miller. |

GEAR CUTTERS.

- | | |
|----------------------------------|----------------------------|
| No. 3 Brown & Sharpe spur. | No. 5 Brown & Sharpe spur. |
| No. 4 Brown & Sharpe spur. | No. 5 Newark spur. |
| No. 4 Newark spur, motor driven. | No. 6 Brown & Sharpe spur. |

DRILLING MACHINES.

- | | |
|--|---|
| 32" Aurora. | 6' Ridgway radial, motor driven. |
| 40" Bement "Goose-neck" drill. | 6' Pond radial, motor driven. |
| No. 13 Pratt & Whitney adjustable multi spindle. | 6' Niles semi-universal radial, motor driven. |
| No. 2 Bement cotter & keyseat drill. | 6' Niles univ. radial, motor driven. |
| 5' Ridgway radial, motor driven. | 8' Pond radial, motor driven. |

VERTICAL BORING MACHINES.

- | | |
|--|--|
| 36"-44" Niles side hd. mill, motor dr. | 100" Niles boring & turn'g mill, m. d. |
| 37" Niles boring & turn'g mill, m. d. | 10' Niles boring & turn'g mill, m. d. |
| 50" and 60" Niles pulley borers. | |

HORIZONTAL BORING MACHINES.

- | | |
|---|--|
| 46" Bement horizontal boring and drilling machine, 23" bar. | |
| 60" Bement horizontal boring and drilling machine, 23" bar. | |
| 62" Bement horizontal boring and drilling machine, 31" bar. | |
| 66" Bement horizontal boring and drilling machine, 41" bar. | |
| 80" Bement horizontal boring and drilling machine, 51" bar, motor driven. | |
| 60" Bement duplex control boring machine, 31" bar, motor driven. | |
| 72" Bement duplex control boring machine, 41" bar, motor driven. | |
| Pond floor drill, 3" bar. | |
| Bement boring, drilling and milling machine, 31" bar, motor driven. | |

SECOND-HAND MACHINERY

Niles-Bement-Pond Company—Continued

HORIZONTAL BORING MACHINES—Continued.

Niles boring, drilling and milling machine, 4½" bar, motor driven.
Niles boring, drilling and milling machine, 5" bar, motor driven.
Niles boring, drilling and milling machine, 6½" bar.
Bement boring, drilling and milling machine, 6" bar, motor driven.

ELECTRIC TRAVELING CRANES, 220 V., D. C.

50-ton crane, 60' span.	3-ton crane, 22' 6" span.
30-ton crane, 50' span.	3-ton crane, 20' 2½" span.
25-ton crane, 45' span.	2-ton crane, 19' span.
5-ton crane, 20' span.	

POWER HOUSE EQUIPMENT.

200 k. w. Thompson-Ryan generator, 250 volts, direct current, direct connected to Corliss steam engine, 100 r. p. m.
100 k. w. Thompson-Ryan generator, 240 volts, direct current, direct connected to McEwen Ridgway engine, 250 r. p. m.
250 k. w. General Electric synchronous converter, 2-phase, 60 cycle, with two transformers for 2300 volts—250 volts direct current.
200 h. p. non-condensing Corliss engine.
250 h. p. non-condensing Corliss twin engine.
125 h. p. Philadelphia non-condensing cross-compound Corliss engine.
10x10x12" Laidlaw, Dunn Gordon class J. E. duplex air compressor.

MISCELLANEOUS.

Bolt cutter, 2" Acme, single, m. d.	Punch, "B" L. & A., 24" throat, m. d., 2½" thru 1½"
Grinder, No. 3 B. & S. univ., mtr. dr.	Punch, No. 3 L. & A., hor., 12" thrt., m. d.
Grinder, 22"x7" Pratt & Whitney vertical surface, motor driven.	Punch, "D." L. & A., dbl., 36" thrt., 3" thru 1½"
Grinder, No. 71 Heald inter., mtr. dr.	Shear, gate, No. 7 L. & A., 12" thrt., 72"x½"
Hammer, 350 lb. Bement sgl. fr. stm.	
Pipe machine, 2" Cox, m. d.	
Punch, No. 2 L. & A., 48" throat, m. d., 1" thru 1"	

All motor driven machines are for 220 volts, direct current.

FOR SALE BY

Jones Machine Tool Co.,

528-532 E. Front St., Cincinnati, O.

LATHES.

14"x 6' Bradford, quick change.	20"x12' Greaves Klusman, q. c.
14"x 6' Monarch, qck. chg., s. p., geared head, (2).	30"x12' H. S. & Gamble, q. c.
16"x 6' Lodge & Shipley, qck. chg.	30"x16' Reed, l. c., cone drive.
	48"x24' Niles, triple geared.

MILLERS.

No. 2 Hendey universal.	No. 2 Cincinnati plain.
No. 1½ Brown & Sharpe, plain.	No. 2 Kempsmith universal.

PLANERS.

30"x12' Gray.	32"x20' American, 2 heads.
30"x 8' Gray, 1 head.	42"x36"x26' Cincinnati, 2 heads.

PRESSES.

No. 1 V. K. & V. press.	No. 8 Long & Allstatter punch.
No. 2 Robinson, o. b.	No. 19 Bliss, open back inc. (2).
No. 6 Toledo, o. b. inc.	No. 20 Bliss, o. b. inc., (5).
No. 4 Stiles b. g. punch.	Horning presses, Toledo and Bliss.

SHAPERS.

16" Stockbridge, b. g. crank.	21" American, back geared crank.
16" Barker, plain crank.	24" Barker, back geared crank.
21" Smith & Mills b. g. crank. (2).	24" Kelly back geared crank.

MISCELLANEOUS.

Bolt cutters, 4" Acme.	Radial, 4' Bickford s. p. drive.
Bulldozer, No. 1 Williams & White.	Square shears, 516A Toledo, power, 14 gauge, 15" gap.
Drill presses, 24" Sibley & Ware (4).	Square shears, 30" Bertsch, foot power, 15" gap.
Gear hobber, No. 12 Barber-Colman.	Vertical turret, 24" New Era type.
Grinder, No. 60 Heald, cylinder.	
Grinder, 10x50 Norton.	

SECOND-HAND MACHINERY

FOR SALE BY

Cyril J. Bath & Co., 6900 Machinery Ave., N. E., Cleveland, O.
BORING MILLS.

36"—44" Niles, with side head, 85%.
60" Bullard, 2 head, rapid traverse, motor drive, 85%.

DRAW BENCHES.

15,000 lbs. to 25,000 lbs. Waterbury-Farrel, United Engineering and Standard; 20" draw, with 18' extensions for mandrels, heavy cast iron; 85%.

DRILLS—MULTI-SPINDLE.

4-spindle 20" Barnes, 85%.
4 spdl. No. 4 Colburn, arranged for motor dr., all geared, cap. 2" in steel, 90%.

DRILLS—RADIAL.

No. 3, 10' Cleveland punch & shear wall radials.
No. 1, 8' wall radial.
1—4' Prentice plain, 60%.
1—4' Cincinnati plain, 70%.

DRILLS—UPRIGHT.

Small 15" drills, 70%, (2).
20" Mechanics-Rockford, 60%.
24" Rockford, as above, 65%.
24" Kokomo hi-speed, slid. hd., 85%.
24" Aurora, sliding head, b. g., 85%.
24" Aurora, slid. hd., gr. fd., 85%, (2).
24" Cincinnati, slid. hd., fric. bk. grs.
28" Cincinnati, sliding head, 80%.
32" Cincinnati, with tap. att., 75%.
24" No. 25 Foote-Burt, 90%, (3).

FORGING MACHINES AND BULLDOZERS.

No. 3, Williams & White double end bulldozer, 80%.
1" Ajax, 75%, (3).
4" Acme, steel bed, 90%.
250-ton Mesta steam hydraulic, 85%.

GRINDERS.

No. 3 Brown & Sharpe univ., 70%.
10x36" Modern univ., and parts, 70%.
84" Diamond surface, 85%.
No. 75 Heald internal, with extra spindles and c/s., 85%.
No. 4 Gardner, motor, disc, 85%.
Washburn drill grinder, 70%.
Yankee drill grinder.
Whitney wet tool grinder, 20"x2" wheel; 75%.

HAMMERS.

No. 6 Nazel, air, motor drive.
No. 8 Beaudry, power, arranged for motor drive, 80%.
100-lb. Bradley, helve, 75%.
500-lb. Bradley, upright helve, 80%.
600-lb. Merrill, board drop, 75%.
800-lb. Billings & S., board drop, 75%.
800-lb. Waterbury-F., board dr., 75%.
800-lb. Lane, steam forging, 80%.
850-lb. Bell, steam forging, 85%.
1500-lb. Waterbury-Farrell, board drop, 80%, (2).
2900-lb. Waterbury-Farrell, board drop, 80%, (2).
800-lb. to 4000 lb. Chambersburg and Massillon steam drop hammers.

LATHES.

14"x6" Hendey tool room, t. a., 75%.
16"x8" Hamilton, belt feed, 50%.
16"x9" Lehmann, 85%.
16"x9" Chard, with chucks, 90%.
18"x8" Lodge & Shipley, 70%, (4).
18"x8" American, 3-step cone, late model, compound rest, 85%.
18"x10" Lodge & Shipley, comp. rest, quick change gears, late model, 3-step cone, taper attach, 85%.
19"x8" LeBlond, friction hd., 60%.
20"x8" Lodge & Shipley, d.b.g., 75%.
20"x12" LeBlond, comp. rest, quick change gears, fric. bk. grd., 85%.
24"x12" Reed, belt feed, loose change gears, 60%.
26"x14" Bridgeford, geared hd., 85%.
32"x18" Schumacher, cone head, 60%.
36"x18" Schumacher, tri bk.grd., 75%.
48"x26" Bridgeford, grd. hd., t. a., 85%.

MILLING MACHINES.

Style "B" Gooley & Edlund, 80%, (2).
20"x7"x18" Oosterlein plain, 50%.
No. 0 Steptoe plain, univ. heads, 90%.
No. 0 Rockford, new.
No. 1 Rockford pl. bk. geared, 90%.
No. 2 Brown & Sharpe vertical, 50%.
No. 3 Brown & Sharpe, plain, 65%.
No. 3B Brown & S., pl., heavy, 60%.
No. 3 Becker, table 28x10, 60%.
No. 5 Becker, 50%, (4).
No. 13 B & S., Lincoln type, 50%.
30"x10" Newton slab miller, arranged for motor drive, 80%.
Becker miller, model "C," table 14"x54", motor drive, 85%.

PLANERS.

22"x24"x57" Fitchburg, 75%.
24"x24"x6" Liberty, 1 head, new.
24"x8" Pond, single head, 50%.
30"x30"x8" Gray, single head, 80%.
30"x8" Lodge & Davis, sgl. hd., 50%.
48"x48"x16" Gray, 4 hds., mtr. dr., 90%.
60"x48"x16" Pond, 2 hds., old style light pattern, 50%.

(Continued on next page)

SECOND-HAND MACHINERY

Cyril J. Bath & Co.—Continued

PIPE MACHINES.

- No. 44, 4" Jarecki, with dies and countershaft, late model, 85%.
No. 88, 8" Jarecki, with dies and countershaft, late model, 85%.

PRESSES.

- Waterbury-Farrel trimmers, 56" flywheel, 4" stroke, 60%, (3).
No. 57 Toledo trimmer, with side shear, 80%.
Small Pratt & Whitney trimmer, stroke 3", 70%.
No. 57 Toledo trimmer, geared, 80%.
No. 54 Bliss trimmer, geared, 80%.
Waterbury-Farrel trimmers, 60" flywheel, 80%, (2).
No. 75½ Bliss trimmer, 80%.
No. 55 Cleveland trimmer, 85%.
Old No. 56 Toledo trimmer, 75%.
P4 Ferracute, 50%.

- 59½ Toledo, straight side, single crank, tie rod frame, 80%.
No. 6 Niagara inclinable, 75%.

PUNCHES AND SHEARS.

- No. 2 Hilles & Jones horizontal punch, 70%.
51" gap American ship punch, capacity 1" thru 1", 70%.
5" Pels bar shear, all steel frame, 85%.
No. 4 Doelger & Kirstle alligator shear, 4" capacity, 85%.

SLOTTERS.

- 10" Newton, with countershaft, 75%.
12" Sellers, 75%.
16"-18" Dill; adjusting ram, arranged for motor drive, 80%.

SAWS.

- No. 3 Ajax hot saw and burring machine, complete, 80%.
6" Racine hack saw, 75%.
9" Racine hack saw, 75%.

SHAPERS.

- 20" American, crank, belt, 80%.
21" Averbeck, 75%.
24" Walcott, crank, back geared, 90%.
24" Gould & Eberhardt crank, back geared, 85%, (2).

TURRET LATHES AND SCREW MACHINES.

- 21" Gisholt, standard model, 70%.
No. 4 Bardons & Oliver, 50%.

WOODWORKING TOOLS.

- 12" Fay & Egan pattern lathe, 90%.
Fay & Egan pony planer, 90%.
15" Silver post drill, 90%.
Fay & Egan rip saw, 90%.

MISCELLANEOUS.

- Air compressor, 14"x12" Ingersoll-Rand, with tank, class E. R. I., serial No. 33413, 85%.
Blower, American, 9' fan, motor driven, 85%.
Blowers, Sturtevant, motor driven, 85%, (2).
Bolt cutter, 2-spindle 1½" Landis, with lead screws, 85%.
Boring machine, for cylinders, portable, 4" bar, 7" feed, arranged for motor or engine drive, 75%.
Gear cutter, 36" Gould & Eberhardt, 60%.
Gear generator, 18" Gleason, late model, with parts, 90%.
Gear hobbess, No. 12 Barber-Colman, 90%, (2).
Magnetic chucks, 90%, (2).
Riveter, Hanna I-beam frame, 12" gap, 90%.

FOR SALE BY

F. H. Allen, " " " " Donaldsonville, La.

Geared ladle, second-hand, 38" deep, 49" wide at top, splendid condition.
Hydraulic wheel press, brand new, latest improved, 48" between tie bars, 150 tons capacity.

Have no use for these machines and will sell cheap.

FOR SALE BY

The Patterson Tool & Supply Co., " " " " Dayton, Ohio

Cam miller, used, Standard \$ 50.00.	Drill pr., used Sigourney, tap. \$ 35.00.
Drills, b., used Burke, ch. k., (4) 17 50.	Gear millers, used Stan., (4) 50.00.
Drill press, used 6-spindle.... 225.00.	Lathe, b., used Hjorth, & eq. 125.00.
Drill pr., used BW-1 Sipp, (2) 150.00.	Screwmchs., used 1½" S.-K., (4) 125.00.
Drill press, used 2-spindle.... 75.00.	Shaper, used 24" P. & J..... 750.00.

SECOND-HAND MACHINERY

FOR SALE BY

A. F. Strafer, 30 Church St., New York City

MODERN TOOLS FROM A U. S. SHIPPING BOARD PLANT

Boring mill, 53" Niles-Bement-Pond, latest type, rapid traverse, motor drive, automatic starter, dynamic braking.
Boring mill, 60" Niles-Bement-Pond, single pulley drive.
Milling machine, Ohio universal, 34"x12"x19", latest design, complete universal equipment, used 100 hours.
Radial drill, 4½" Morris, like new, tapping att., speed box, depth gauge.
Radial, 6" Baush, heavy type, latest, belt driven, new.
Radial, 6" Baush, belt drive, latest, slightly used.
Shaper, 25" Smith & Mills heavy back geared, used six months.
Turret lathe, 3½x36 Cincinnati Acme, grd. hd., complete, chuck equipment.
Each of the above tools will give service practically equal to new machines.

Satisfactory operation is guaranteed or money refunded.

BORING MILLS, VERTICAL AND HORIZONTAL.

12" Pond, belt drive.	53" Niles-B.-P. rapid trav., d. c., m. d.
72" Pond, belted motor drive.	No. 2 Rochester, 3" bar, s. p. d.
24" Bullard, v. t. l., New Era.	60" Niles-B.-P., vertical, s. p. d.
3" & 4" bar Rochester, floor type.	No. 3 Universal horizontal, s. p. d.
51" Bullard, belt drive.	Barrett cylinder, Nos. 1 & 2.

DRILLS, UPRIGHT AND RADIAL.

6" Baush, belt drive, new.	4½" Dreses, motor drive.
5" Baush, belt drive.	No. 310 Baker, heavy duty.
4½" Morris, latest type, s. p. d.	26" Sibley, sliding head.
6" Niles-Bement-Pond universal.	26" Barnes, sliding head.

GRINDERS

No. 16 Blanchard, motor drive.	10"x24" Landis, self contained.
Springfield Brandes, 12x48" surface.	10"x30" Webster & Perks univ.
No. 60 Heald cylinder.	No. 2 Brown & Sharpe, surface.

LATHES

50"x30" Pittsburgh, quick change.	44"x24" Niles-P.-B., t. g., belt drive.
27"x18" LeBlond, heavy.	28"x18" Sidney, quick change.
18"x 8" Morris.	20"x 8" American, quick change.

TURRET LATHES.

3½"x36" Cin'ti Acme flat, modern, geared head, chuck equipment.	24"x24" J. & L., bar equipment.
24" Gisholt, 6½" hole thru spindle.	21" Gisholt, 2-step cone, modern.
	24"x26" Greenlee, chuck equipment.

MILLING MACHINES.

No. 4 Cincinnati plain horiz., h. p.	No. 3 Ohio universal, like new.
No. 4 Cincinnati h. power vertical.	No. 3 Cincinnati vert., high power.
No. 3 Brown & Sharpe, pl. cone type.	No. 4 "B" Becker vertical.

PLANERS.

150"x25", 4 heads, stand, belt drive.	48"x10" Cleveland, open side.
120"x25" Sellers, motor drive.	48"x48"x14", 4 heads, m. d.
36"x36"x8" Sellers, 4 heads, belt dr.	28"x28"x10" American, 1 head, b. d.

PIPE MACHINES AND BOLT CUTTERS.

4" Saunders, belt drive.	24" to 10" Curtis & Curtis.
Little Giant No. 732, 1" capacity.	14" Landis bolt cutter.
14" National bolt cutter.	Jarecki 24", a. c. motor drive.

PUNCHES AND SHEARS.

No. 6 Quickwork rotary.	Buffalo armor pl. "U" 25 comb.
No. 4 H. & J. double, 48", t. a., c. m.	No. 5 H. & J., 48" t., a. c. motor.
No. 2 H. & J. double angle.	No. 4-A Quickwork, motor drive.
Lenox rotary bevel, 8" capacity.	Morgan & W. gate shear, 9", 3" cap.
No. 6 H. & J. 60" thrt., a. c. motor.	Pels type beam shear, 6" to 24" cap.

SHAPERS.

25" Smith & Mills b. g. crank.	24" Potter & Johnston universal.
16" Milwaukee b. g. crank.	24" Cincinnati, b. g.

MISCELLANEOUS PLANT EQUIPMENT.

Air drills, Thor, \$20. to \$50.	Hammer, 3000 lb. Bell single frame.
Air hammers, 2" & 6", \$15.	Hammer, 3000 lb. Bell double leg.
Brake, tinsmith's, 98".	Hammer, 600 lb. Erie, forging.
Gas engine, 15 h. p. Novo 2 c., new.	Header, Ajax 1½", all steel.

SECOND-HAND MACHINERY

A. F. Strafer—Continued.

MISCELLANEOUS PLANT EQUIPMENT—CONTINUED.

Jointer, 12" American.	Saw, No. 6 Nutter & B., a. c. motor.
Roll, 16", capacity, 4".	Saw table, universal, American.
Rolls, 4"—20" Niles-Bement-Pond,	Surfacer, single, 30" American.
a. c. motors.	Tapping attach., 1" Errington, \$75.

FOR SALE BY

Brownell Machinery Co., 11-13 Eddy St., Providence, R. I.

BORING MILLS.

24" Bullard, New Era.	30" Baush vertical.
24" Bullard rapid production.	

DRILLS.

3' Reed-Prentice radial.	3-spindle Reed-Prentice b. b.
26" Henry & Wright sen. radial.	4-spindle Barr, power feed.
25" Weigel, sliding head.	4-spindle Demco bench, No. 34A.
23" Snyder, stationary.	5-spindle Henry & Wright, "K".

GEAR CUTTERS.

Whiton, hand feed.	No. 13 B. & S. spur & bevel, 18x4.
No. 12 Brown & Sharpe, universal,	No. 3 B. & S. spur & bevel 26x8.
spur and bevel, 12x8.	

GRINDERS.

8x36 B. & S. plain cylindrical.	No. 1 Wilmarth & Morman cutter
No. 3 Wilmarth & Morman surface.	and reamer.
Cleveland profile.	20" Taylor & Fenn wet tool.
No. 2 B. & S. cutter.	20" Blount wet tool.

LATHES.

11"x 4' Mann.	12"x 5' Vernon, q. c. g. taper.
12"x 6' Prentice, with draw-in and	20"x 8' Roulsted.
taper.	26"x 16' Reed.

MILLING MACHINES.

No. 13 Garvin plain, 42".	No. 3 Owen plain.
No. 25 Bilton plain.	No. 2B Rockford universal.
No. 4 Cincinnati plain.	No. 6 Becker vertical.
Type A Briggs plain.	No. 4 Thurston die.
No. 1 Kempamith plain.	No. 3 Burke bench.
28" Oesterlein plain.	No. 6 Whitney hand.

PLANERS AND SHAPERS.

22"x22"x 5' Whitcomb.	15" Hendey friction shaper.
24"x24"x 6' Powell.	16" Sellow tool room shaper.
26"x30"x14' Whitcomb-Blaisdell.	20" Kelly double back shaper.
30"x30"x12' Bement Miles.	24" Potter & Johnston shaper.

ROLLING MILLS.

4x 6 McWilliams.	6x10 McWilliams.
5x 8 McWilliams.	

SCREW MACHINES.

No. 705 Rivett precision.	No. 6A Potter & Johnston, late type.
No. 2 Southworth, plain head.	No. 2P Potter & Johnston piston
No. 2 Wood tilted turret.	and piston ring.
1 1/2"x18 Pratt & Whitney, b. g., p. f.	1 1/2" model B Cleveland plain full
No. 2 1/2 Garvin, g. f. h.	automatics.

PRESSES.

No. 24 Atlas arbor presses.	No. 4 Manville, roll feed, 1 1/2".
No. 3B Standard inclinable 2".	50 lb. Standard automatic drop.
No. 1 Standard broaching, 7".	200 lb. Standard automatic drop.
No. 54 Niagara geared, 4".	

MISCELLANEOUS.

Broaching machine, No. 0 LaPointe.	Scroll saw, No. 1 Beach.
Coupling, No. 2 Almond.	Shaft straightener, Rockford 3", 10'b.
Oil extractor, No. 2 American.	Shears, McWilliams pwr. rot'y 3/16".
Pipe machine, No. 7-B Jarecki, 3".	Slotter, 12" Bement-Miles.
Saw table, No. 3 Crescent.	Straight edge, B. & S. c. i.
Saw table, No. 650 Dover.	Swaging machine, No. 2 Standard.
Saw table, Rollston double arbor.	Tapping mche., No. 2 Garvin vert.

SECOND-HAND MACHINERY

FOR SALE BY

Bennett Machinery Co.,

30 Church St., New York City

Boring mill, 51" Bridgeport, 2 hds.
Grinder, univ. cutter and reamer,
Draper & Hall.
Lathe, 16"x6" Sebastian, qck. chg.
Lathe, 24"x10" Draper, 90% cond.
Lathe, gap, 20"/42"x10" Fay & Scott.

Pipe machine, 8" E. C. & B.
Pipe machine, 3" Jarecki No. 7B.
Planer, 54"x12" Pond, 4 heads.
Planer, plate, 18" Niles.
Punch, s. e., 25" throat, 4"x4".

FOR SALE BY

W. P. Little Co.,

West 9th & Front Sts., Cleveland, Ohio

MULTIPLE DRILLING MACHINES.

20" 4-spindle Rockford, with automatic approach and return feed, (2).

LATHES.

14"x 6' LeBlond, q. c. g., c. r.
16"x 6' LeBlond, q. c. g., c. r.

16"x 6' Bradford, q. c. g., & t. a.
18"x 8' Porter, d. b. g.

TURRET LATHES AND SCREW MACHINES.

No. 2 Warner & S., auto. chuck.
No. 2 B. & O., b. g. auto. chuck.
14" Cincinnati Acme, b. g., p. f.

No. 4 W. & S., back geared, p. f.
No. 6 W. & S., back geared, p. f.
No. 1 Brown & Sharpe automatic.

MILLING MACHINES.

18" Cincinnati b. g.
No. 15 Brainard.

No. 1 Kempsmith pl., with div. hd.
U. S. hand miller.

PUNCH PRESSES.

No. 14 Williams & White.
No. 3 Long & Allstater, dbl. end.

Z. & H. double acting cam drawing,
30" geared, arch.

GRINDERS.

No. 6 Bryant internal.
No. 75 Heald internal.

No. 3 Modern universal.
No. 6 Rivett internal.

RADIAL TAPPING MACHINE.

4" Rickert-Shafer radial tapping machine, motor driven.

MISCELLANEOUS.

Bolt cutter, 2" Foote-Burt.
Boring mche., No. 3 Marvel cylinder.
Broach, 3-A LaPointe.
Hammer, 80 lb. Bradley upright.

Hammer, 250 lb. Morgan steam.
Spinning lathe, 22" Prybil.
Spinning lathe, 25" Prybil.
Spline miller, 4" Pratt & Whitney.

FOR SALE BY

Badger-Packard Mch. Co.,

133-139 W. Water St., Milwaukee, Wis.

Brake, 60" D. & K. \$ 60.
Brake, 10' Robinson 200.
Boring mill, Colburn 500.
Boring mill, Niles 1200.
Drill, 20", b. g., p. f. 125.
Drill, 20", lever feed 90.
Drill, 24", b. g., sta. hd. 175.
Drill, 32", sliding head 350.
Drill, 32" Baker, b. g., p. f. 300.
Drill, 12" Albany 150.
Drill, 14" 4 spline Hoefler 275.
Drill, 2 spline hole hog 1200.
Drill radial, 34' 650.
Drill, radial, 4' Bickford 500.
Drill, radial, 5' Fostick 900.
Grinders, 5"x18" Ott 300.
Grinder, No. 1 Grand Rapids 300.
Grinder, Cin. cutter & reamer 150.
Lathe, 13-22"x34' gap 350.
Lathe, 11"x 5' Rockford 165.
Lathe, 16"x10' Perkins 225.
Lathe, 18"x 8' Ham., c. r. 275.
Lathe, 26"x10' Davis, c. r. 750.
Lathe, 30"x20' L. & S., q. c. 1500.

Miller, No. 1 Kempsmith pl. \$ 450.
Miller, No. 2 Milwaukee, plain 450.
Miller, No. 3 Kempsmith, pl. 500.
Miller, No. 1, universal & hds. 450.
Planer, 16"x36" New Haven 300.
Planer, 24"x 6' Gray, 1 head 1100.
Planer, 48"x13' Whitcomb, 4 hd. 2000.
Press, No. 1 R. & K., o. b. i. 150.
Press, No. 1 Perkins model A 90.
Press, No. 2 Ferracute, o. bk. 125.
Press, No. 3 Niagara, o. b. i. 250.
Press, No. 3 Toledo, o. b. i. 325.
Press, No. 4 Walsh, o. b. i. 425.
Press, No. 69 Bliss, d. act. o. b. i. 475.
Press, No. DG-4 Ferracute, gd. 500.
Screw mche., W. & S. No. 2. 275.
Screw mche., P. & W. No. 1. 195.
Screw mch., Smith 1", 96% new 325.
Shaper, 14", friction 150.
Shaper, 18" American, b. g. 500.
Shaper, 20" Steptoe, b. g. 745.
Shaper, 48" Morton, draw cut. 350.
36" Square shear, gap, ft. pwr. 165.
36" Square shear, reg. 85.

SECOND-HAND MACHINERY

FOR SALE BY

Marr-Galbreath Machinery Co.,

Air compressor, Curtis 2½x3".
Air compressor, 4½x4½" Curtis.
Angle & bar bender, No. 9 Buffalo.
Bolt cutters, Acme 6", Landis 2½".
Bolt cutter, 2" Acme, sgl. 2½" head.
Bolt cutter, 2" Acme, dbl., Landis hd.
Bolt cutter, 1½" Acme, triple head.
Boring mills, Rockford, 2" & 3" bar.
Boring mill, No. 21 Lucas hor., 3" bar.
Boring mill, vertical, 72" Betts.
Boring mill, 40" sgl. hd., light \$175.
Brake, 8' Chicago, for 18 gauge.
Brake, 8' double truss, hand, 16 ga.
Brake or press, 10' Robinson, toggle.
Bulldozers, Nos. 24, 6 & 30 W.-W.
Compressor, 5x6" Ing.-Rand, m. d.
Compressor, 12"x14" Chicago, 275 cu. ft., belt.
Compressor, 14"x10"x12", Ingersoll.
Compressor, 1300, 888, 599 cu. ft., m. d.
Drills, radial, 3' Rockford, t. a.
Drills, radial, 3' Prentice, 3' Fostick.
Drill, radial, 30" Hamilton, t. a.
Drills, radial, 5' Baush, \$500.
Drills, 36" Hoefer; 24" Aurora, s. h.
Drill, 13" Washburn sensitive.
Drills, 21 and 20" Barnes, hand and lever feed.
Drill, 28" Barnes, sliding hd., b. g.
Drill, 20" Rockford, sl. hd., q. c. g.
Drill, 22" American, hand & lever fd.
Drills, 22" Aurora upright (2).
Drills, No. 2 Colburn, mfg. type, (4).
Drill, Allen, 20" sensitive, 4-srdl.
Drill, heavy duty, 24" Foote-Burt.
Exhausters, No. 8 Buffalo.
Fan, ventilating, Amer., 4" wheel.
Forging machines, 1½, 2, 2½ & 3".
Gear h. bber, No. 12 Barber-Colman.
Grinder, No. 60 Heald internal.
Grinder, Gardner, 16" disc & ring w.
Grinder, Diamond dbl. end, 14" wh.
Grinder No. 1 Besley 12" disc, swing and angle table.
Grinder, disc, No. 10 Besley, 18" wh.
Hack saw, Racine fine sp., 6x6".
Hack saw, No. 5 Marvel, cap. 6x6".
Hack saw, No. 1 Racine 6x6".
Hammer, 40 lb. Yeakley, belted.
Hammers, 80, 160 & 125 lb. Bradley.
Hammer, 600 lb. Bement, sgl. leg. at.
Hammers, steam drop, 1500, 3000 lb.
Hot saw & burring machine, Acme.
Keyseater, No. 1 Davis, cap. 1" key.
Lathe, gap, 36/60"x12/20" Harringt'n.
Lathe, 42"x32" Am., grd. hd., m. d.
Lathe, 36"x18" American, g. h. t. a., for constant speed m. d.
Lathe, 30"x14" L. & S., q. c. g., t. a.
Lathes, 27"x10" Lodge & S., q. c. g.
Lathes, 25"x12" LeBlond, q. c. g., t. a.
Lathes, 24"x10" Reed, turret on bed.
Lathe, 18"x10" Porter, s. b. g., c. r.
Lathe, 18"x8½" Hendey, pl. change.

58 Water St., Pittsburgh, Pa.

Lathes, 18"x10" L. & S. & LeBlond.
Lathe, 18"x8" Am., q. c. g., tap. att.
Lathe, 16"x8" Bradford, pl. change.
Lathe, 14"x6" Monarch, q. c. g., t. a.
Lathe, 14"x6" Hendey, No. 22770, taper, draw-in and relieving att.
Lathe, speed, 11"x4" Prentiss, t-rest.
Miller, bench, No. 1 Burke, hand.
Miller, No. 3½ Fox, hand, 24"x6"x14½".
Miller, No. 4½ Cin. pl., 18"x6"x15".
Miller, No. 3H LeBlond, pl. ind. hd.
Miller, No. 2 Kempsmith universal.
Miller, Hendey Lincoln with count.
Miller, Knight duplex, tbl. 8½"x32".
Nut tapper, 4" Acme 6-sp. semi-auto.
Pipe mchs., 4" Oster, belt drive.
Pipe machine, 8" Saunders.
Planer, 60x60"x12" Pond, 3 hds., m. d.
Planer, 42"x42"x12" Betts, 1 head.
Planer, 42"x36"x20" Cin'ti, 4 heads.
Planer, 42"x36"x12" Cin'ti, 3 heads.
Planer, 30"x30"x 8' Niles, hy., 1 hd.
Planer, 26"x26"x8' Niles, 1 head.
Planer, 24"x24"x8" Gale, 1 head.
Planer, 24"x24"x 5' New H., 1 hd.
Press, No. 27 Bliss, horning, b. g.
Presses, No. 75½ Bliss, tie rod 6" st., s. b. g., m. d.
Press, No. 56 Toledo, pl. trim., 3" str.
Press, No. 11 Perkins, pl. trim., 4" str.
Press, No. 82 Consolidated horning, 1000 lb.
Press, C-8 Ferracute, o. b. i., plain.
Press, 83 Bliss, 10" stroke, geared.
Press, 65-N Bliss (cam), plain.
Punch, Cleveland 7" tht., cap. 3"x3".
Punch, 15" ths., dbl. 4x4", arch. jaws.
Punch & shear, H. & J., 72" tht., cap. 1½"x1½", motor drive.
Riveter, 1" Shuster, style A.
Punch & s. Queen City, 14" tht., 4-4".
Rivet hammers, 3-A, 4-A, 5-A, hi. sp.
Rivet spinner, 3/16" Grant rotary.
Rolls, bending, 20"x6" H. & J., d. e., m. d.
Rolls, bending, 16" H. & J., cap. 4", extension for 24", with motors 220 v., d. c. (near new).
Saw, No. 11½ Higley, cap. 4" blade.
Saw, Gorton, size 2B internal tooth.
Shaper, 15" Kelly, sgl. grd. crank.
Shaper, 21" American, b. g., crank.
Shaper, 24" Steptoe, b. g., crank.
Shaper, crank, 17" Smith & M., s. g.
Shaper, 28" Hendey, pillar type.
Shear, 80"x16 ga. 18" gap, power.
Shears, Quickwork No. 6, m. d.
Shear, rotary, 4" Lennox, 8" gap.
Shear, splitting, No. 26 Beloit, cap. 4", m. d.
Shear, squaring, 42" Niagara, ft. prw.
Slotters, 16" & 18" Bement-Miles.
Test'g mch. 100,000 & 150,000 lb. cap.
Turret lathe, No. 1 Bardons & Oliver.

We Buy, Sell and Exchange,

SECOND-HAND MACHINERY

FOR SALE BY

Clark Machinery Co., 1235-45 St. Clair Ave., Cleveland, O.

Brake, 8', 16 gauge.
 Millers, vertical, No. 2 Becker.
 Millers, vertical, No. 5 Becker.
 Millers, vertical, No. 2 Brown & S.
 Planer, 42"x42"x8' Gray, 2 heads.
 Shaper, 9" Pratt & Whitney.
 Shaper, 10" Pratt & Whitney.
 Shaper, 16" Ohio.
 Shaper, 16" Gould & Eberhardt, b. g.
 Shaper, 20" Smith & Mills.
 Shaper, 24" Ohio, back geared.
 Square shear, 6', 18 gauge.
 Machine tools for every purpose. Send us your inquiries.

FOR SALE BY

Syracuse Supply Company, 314 W. Fayette St., Syracuse, N. Y.

Guaranteed New Machines in original crates at prices below list:
 Crucible, FD-104 Hoskins.
 Drills, 21" Canedy-Otto (2).
 Drills, 20" Buffalo (4).
 Grinder, Churchill internal.
 Lathe, 14"x6' Hamilton.
 Lathe, 16"x8' Hamilton.
 Lathe, 10"x5' Monarch.
 Lathe, 14"x6' Monarch.
 Lathe, 14"x8' Monarch.
 Lathe, 16"x6' Monarch.
 Miller, 42" type "B" Briggs.
 Pipe machine, No. 70 Forbes.
 Screwmchs., No. 4 W. & S., g.f.h., (3).
 Slotter, No. 3 Rhodes.
 Straightener, No. 2 Corey.
 Tilted turret, No. 4 Wood.
 Turret lathe, No. 4 W. & S. univ.

Exceptional values in Used Tools:

Grinder, No. 0 Wilmarth & Morman.
 Lathes, 14"x 6' American (2).
 Lathe, 14"x 6' Monarch.
 Lathe, 16"x 6' Hendey, rebuilt.
 Lathe, 16"x 8' American, geared head, rebuilt.
 Lathe, 16"x 8' Monarch.
 Lathe, 18"x10' American.
 Miller, No. 5 Becker vertical.
 Press, No. 69N Bliss.
 Radial, 4' Cin'ti-Bickford, GB-BD.
 Shaper, 16" Gould & Eberhardt.
 Thread miller, Lees-Bradner.
 Tilted turret, No. 6 Wood.
 Turret lathes, No. 4 Foster (2).
 Turret lathe, No. 2 Warner & S., hollow hex.
 Turret lathe, 24"x26 Pratt & Whitney.
 Turret lathe, No. 2 s. g. Garvin.
 Turret lathes, 3x36 Jones & L. (3).
 Turret lathe, 2x24 Jones & Lamson.

FOR SALE BY

McCoy-Brandt Machinery Co., 210-14 Penn Ave., Pittsburgh, Pa.

Air compressor, 115 cu. ft. Chicago, belted.
 Air compressor, belted, 242 cu. ft.
 Air compressors, steam, 909, 2052 and 2200 cu. ft.
 Bolt cutter, 24" Landis, single head.
 Boring mill, 42" Bullard, New Era t.
 Boring mill, 10' Niles, 2 heads.
 Bulldozers, Nos. 2, 4, 6 and 30.
 Drill, 20" Buffalo, b. g.
 Drills, radial, 5' Prentice, s. p. d.
 Flanging machine, McCabe pneumatic, capacity 4"
 Forging machines, 2", 3", 4" and 5".
 Grinders, 12"x48" Cincinnati plain.
 Grinder, 10"x72" Norton pl., m. d.
 Grinder, Gisholt universal tool.
 Grinder, 36" Diamond wet tool.
 Grinder, 10x32" Ott universal.
 Grinder, No. 4 Gardner double disc.
 Lathes, 14"x 6' Hendey, grd. hd., m. d.
 Lathe, 17"x12' LeBlond, g. h., t. a.
 Lathe, 19"x14' LeBlond, grd. hd.
 Lathe, 20"x10' Monarch, q. c. g.
 Lathe, 24"x28' American, m. d.
 Lathes, 26"x12' Putnam, cone.
 Lathe, 36"x20' Sidney, q. c. g., cone.
 Lathe, 36"x28' Putnam, m. d.
 Millers, horiz. Nos. 3 & 5 Cincinnati.
 Miller, No. 14-MP Garvin plain.
 Miller, vertical, No. 6 Bickett.
 Millers, vertical, No. 3 Brown & Sharpe, motor drive.
 Millers, Nos. 2, 5C & 6 Becker vert.
 Nut tappers, 10 spindle, rotary, cap. 1 1/2" nuts.
 Pipe machines, 12", 10", 8", 4" & 2".
 Planer, 30"x30"x8' Flather, 1 head.
 Planer, 120"x25' Sellers, 4 hds., m. d.
 Press, No. 68 Bliss, double acting.
 Press, No. 51 Bliss, s. s., 1 1/2" stroke.
 Punch, 48" thrt. 1" thru 1", arch. jaw.
 Punch, dbl. end, 20" throats, 1 1/2" x 1".
 Rolls, bending, 16"x 3/4" Wickes, m. d.
 Rolls, leveling, H. & J. 62", 11 rolls 54" diam.
 Shear, angle, 6"x6" L. & A. dbl., m. d.
 Shears, guil., cap. 2 1/2", 2"x1".
 Shear, rotary, cap. 1/2", with circ. att.
 Shear, rotary bevel, cap. 1/2", m. d.
 Turret lathe, 18" Libby, like new.

SECOND-HAND MACHINERY

FOR SALE BY

A. D. White Machinery Co., - 108-114 N. Jefferson St., Chicago

MILLING MACHINES.

No. 0 Rockford, power feed.
No. 25 Becker, plain (3).
No. 2-B Brown & Sharpe, plain.
No. 2 B hvy. Brown & Sharpe, pl.
No. 3 Cincinnati, plain (3).
No. 3 Kempsmith, plain.

No. 3 H LeBlond, plain, vert. att.
No. 3 Cincinnati high power vert.
No. 5 B Becker, vertical.
No. 6 Becker vertical.
Nos. 2 & 3 Pratt & W. die sinkers.
No. 6 Whitney hand (3).

DRILLS.

No. 1 $\frac{1}{2}$ Avey b. b., 1, 2, 4 spindle.
28" Hamilton and Aurora drills.
36" Aurora drills. (2).
36" Cincinnati, tapping attach.

5' Bickford universal radial.
5' Reed-Prentice plain radial.
36" American sensitive radial.
No. 3 Foote-Burt 4-spindle gang.

LATHES.

14"x 8' Fay & Scott, taper attach.
16"x 6' Reed-Prentice. sgl. pul. dr.
18"x 7' Chard, d. b. g.
18"x 9' Hell, d. b. g.
20"x 8' Reed, with 220 v., d. c. mtr.
20"x 8' Hamilton, d. b. g.

20"x 8' Lodge & Shipley, grd. hd., q. c.
20"x10' American, geared head, q. c.
22"x10' Davis, d. b. g., q. c.
34"x10' Putnam, heavy type.
36"x18' Fifield, with taper.
38"x14' Fifield, heavy pattern.

SHAPERS AND PLANERS.

16" Stockbridge shaper.
24" Kelly back geared shaper.
26"x6' Pond planer.
30"x8' Ohio planer, heavy pattern.

36"x36"x15' Betts planer, 2 hds.
42"x36"x8' Cincinnati planer.
36"x30"x8' Cin. planer, motor 7 $\frac{1}{2}$ h.p.,
220 v., 3 ph., 60 cycle.

GRINDERS.

6"x32" Norton grinder.
14"x72" Norton grinder.
16"x48" Landis crank pin, self contained.
12"x32" Landis universal.

16"x96" Landis plain.
No. 2 Oesterlein tool & cutter.
No. 2 Woods tool & cutter.
No. 1 Cincinnati tool grinders (3).
P. & W. vertical surface.

SCREW MACHINES AND TURRET LATHES.

No. 00 B. & S. auto. screw machine,
slotting attach., serial 6202.
 $\frac{1}{2}$ " Cleveland model A, ser. No. 27360.
2" Cleveland model A, ser. No. 26302.
 $\frac{1}{2}$ " Cleveland model A. (2).
No. 1 Garvin hand screw machine.
No. 3 Superior hand screw mche.
No. 4 Milholland hand screw mche.

16" Drees Fox lathe.
18" Springfield and Am. Fox lathes.
No. 3 Warner & Swasey Fox lathe.
3x36 Jones & Lamson.
21" Gisholt turret lathe.
20x8 Fay & Scott univ. tur. lathe.
No. 3 Pratt & Whitney turret lathe,
3" hole in spindle.

PRESSES.

No. 75 $\frac{1}{2}$ Bliss, tie rod frame, geared,
6" stroke.
No. 3 Walsh open back inclinable.
No. 4 Walsh open back inclinable.
No. 3 Stiles solid back.

No. 24E Bliss double crank geared
press, area bed 14"x72".
No. 95 Consolidated, solid back.
No. 31 Toledo, solid back.
Two small horn presses.

BORING MILLS.

30" Bullard, single turret head.
36" Niles two heads.

42" Bullard, motor drive, 2 heads.
2 $\frac{1}{2}$ " Binse horiz. boring machine.

TURRET LATHES.

24" and 36" Bullard vertical turret lathes, excellent condition.

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 "Connecticut Machinery Merchants"

SHAPERS.

19 Hendey 15" friction shapers, complete with vises, countershafts, wrenches, etc., overhauled and in A-1 condition. Price \$195.00 each, f. o. b. New Haven, Conn. Act quick.

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Drill, 10" Langelier, h. s.	Lathe, 7"x32" Cataract.
Drill, 2½" C. & O. radial, power fd.	Lathe, 13"x6" Willard, with chuck.
Filing machine, No. 3 Barry, floor.	Lathe, 14"x6" Monarch, q. c. g.
Fox lathe, 16" Drees universal.	Shaper, 14" Steptoe, crank.
Grinder, 3' h.p. Ransom, 12x2 wheels.	Shaper, 5"x36" Fellows, gear.

FOR SALE BY

The H. A. Smith Machinery Co., - **Syracuse, N. Y.**

BALANCING MACHINE.

Rockford style B, motor driven.

BORING MILLS.

Gisholt 36" vertical, with combination chuck in table.

Gisholt 42" vertical, 2 swivel heads.

DRILL PRESSES.

Allen 4-spindle ball bearing.

Barr 6-spindle, 4" capacity.

Snyder 30", bk. grd., sliding head.

Barnes 34", bk. grd., sliding head.

Snyder 36", b.g., slid. hd., tap. attach.

RADIAL DRILLS.

Fosdick 5' universal, motor drive.

Hammond 4' sensitive, tap. att., (3).

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26" Brown & Sharpe No. 3.

49" Gould & Eberhardt.

Fellows No. 62 gear shaper, motor drive.

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No. 10 Brown & Sharpe plain.

12x36 Modern, new.

10x72 Landis plain.

12x40 Modern plain.

16x52 Landis plain.

UNIVERSAL TOOL AND CUTTER GRINDERS.

Wells No. 190 universal.

Brown & Sharpe No. 3 universal.

INTERNAL GRINDERS.

Bryant No. 10-A.

Brown & Sharpe No. 23.

Madison Gisholt automobile cylinder grinder.

LATHES.

20x10 Hendey, taper attachment.

24x12 Hendey, taper attachment.

12x6 Seneca Falls, with pan & taper.

12x6 Seneca Falls style E.

14x24x5½' bed Barnes, gap.

21x12 Porter, with increase swing att.

PORTER-CABLE LATHES.

Porter-Cable, with complete piston turning equipment.

MILLING MACHINES.

No. 13-B Brown & S. production.

Cincinnati No. 3 plain.

No. 3 B. & S. vert., all power fds.

Brown & Sharpe No. 5 vertical.

No. 00 Brown & Sharpe hand miller.

PLANERS.

24"x24"x 6' Chandler.

26"x26"x 8' Niles.

26"x26"x10' Whitcomb.

36"x36"x24' Pond, 4 heads.

74"x54"x24' Pond, 4 heads.

AUTOMATIC SCREW MACHINES.

No. 2-A W. & S. hollow hex. turret lathes, with chucking equipment.

No. 0G Brown & Sharpe automatic.

21" Gisholt turret lathes, \$300 to \$500, according to condition, (3).

Cleveland 4½" automatic.

MISCELLANEOUS.

Cutting-off machine, Hurlbut-Rogers, 4".

Die slotting machine, Garvin.

Grinder, Sellers auto, twist drill.

Tapping machine, Garvin No. 2.

Tapping machine, Garvin No. 2X.

SECOND-HAND MACHINERY

FOR SALE BY

The Strong, Carlisle & Hammond Co., Cleveland, O., Detroit, Mich.

ENGINE LATHES.

12"x 5' Hendey, c. r., q. c. g., with pan bed (4).
12"x 5' Hendey, c. r. and t. a., q. c. g., with draw-in att., pan bed.
12"x 6' Seneca Falls, c. r. and t. a., with relieving att.
14"x 6' LeBlond, l. c. g. and chuck.
14"x 6' LeBlond, c. r., q. c. g.
14"x 6' Hamilton.
14"x 6' Monarch, c. r., standard.

14"x 6' Prentice Bros., s. b. g., l. c. g., with t. a., with 8" 4-jaw ind. ck.
14"x 8' Monarch, c. r., stand. pattern.
14"x 8' LeBlond, c. r., q. c. g.
15"x 6' South Bend, c. r., complete.
16"x 6' South Bend, c. r., complete.
18"x 8' Prentice c. r., l. c. g., chuck.
18"x 10' Star, 4-s. c., s. g., with 16" 4-jaw ind. chuck.

TURRET LATHES AND SCREW MACHINES.

No. 2-A W. & S. g. h. tur. lathes.
No. 3-A W. & S. g. h. turret lathe.
14" Acme screw mche., p. f. to tur.
26" Gisholt heavy duty turret lathe.
2"x24" Jones & L. g. h. flat turret.
No. 00 Brown & Sharpe auto., (8).
No. 0 Brown & Sharpe auto. (2).
No. 2 Brown & Sharpe auto. (2).
No. 2 Warner & S. p. h. screw mchs., a. c. & b. f., p. f. to turret. (3).
1" Biggs, p. h., a. c. & b. f.

No. 4 W. & S., p. h., a. c. & b. f.
No. 2 W. & S., p. h., a. c. and b. f. (4).
No. 2 W. & S., p. h., a. c. and b. f., with p. f. to turret (5).
No. 4 W. & S., g. f. h., a. c. and b. f. (4).
No. 4 W. & S., g. f. h., a. c. and b. f. with p. f. to turret (3).
18" Libby, factory rebuilt.
No. 2-G B. & S. automatics (3).
No. 2 B. & S. turret forming (2).

DRILLING MACHINES.

20" W. F. & John Barnes, stationary head, b. g. and p. f. (2).
24" Baker heavy duty.
4-spindle Leland-Gifford, h. s., b. b., with p. f. to each spindle.
6' arm Western radial, with tap. att., arranged for motor drive.
20" Superior, stationary hd., p. l. f.

20" W. F. & John Barnes, stationary head, p. l. f., (2).
20" Hamilton, w. and l.
12" Mechanics, friction driven.
6-sp. 12" Leland-G., h. s., b. b. (6).
12" 3-sp. Leland-G., h. s., b. b. (4).
14" 3-sp. Leland-G., h. s., b. b. (3).
14" 4-sp. Leland-G., h. s., b. b. (3).

MILLING MACHINES.

No. 0 Bickett, hand, bench type (7).
Toledo hand milling machines (2).
No. 2 K. & T. vertical, arranged for motor drive.
No. 2-B B. & S. plain, constant s. dr.
No. 1 Cincinnatti old style univ.
No. 4 B. & S. cone drive universal.
No. 7 Becker plain.

No. 26 Becker pl., without bk. grs., with power fd., pump and tank.
No. 14 Rockford plain, with div. hd.
No. 24 Ohio plain b. g. complete.
No. 1-Y Brown & Sharpe plain.
Potter & Johnston dbl. table automatic production miller.

GRINDERS.

No. 1 B. & S. universal.
No. 10 B. & S. plain, (2).
No. 6-A Bryant internal.
No. 2 B. & S. surface, with magnetic chucks, (2).

LaSalle combination pl. and surface.
No. 1 LeBlond cutter grinder.
Type "DE" Hisey-Wolf internal.
No. 11 B. & S. plain grinders, (5).
Plain emery wh'l stand with column.

SHAPERS AND PLANERS.

15" Flather crank shaper.
22"x22" x 5' Putnam planers (2).

36"x36"x12" W. & P., two rail heads.

METAL CUTTING TOOLS AND SQUARING SHEARS.

Higley cold saw.
3" new Davis cutting-off machine.

30" Niagara foot power squar. shear.

GEAR CUTTERS AND HOBBERS.

26" & 36" No. 3 Brown & S. auto.
No. 13 Brown & Sharpe auto.

No. 12 Barber-Colman hobbers.
No. 12 B. & S., bevel, (2).

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Coffman post pwr. dr. hammer, 25 lbs.

Quickwork body hammer.

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A. M. Steehr Machinery Co.,

Blue printing and drying machine.
Boring mills, 42" Baush, 54 & 60"
Niles, all have 2 heads, and others.
Drill presses, 2 & 4 spindle Henry
& Wright, and others.
Gear hobbers, cutters: 12" Cincinnati;
48" & 60" Gould & E., 36" Fellows
gear shaper, and others.
Grinders, Heald piston ring (4);
No. 3 LaSalle plain and surface;
3x15" Norton, and others.
Hammer, 500 lb. Beaudry, & others.
Lathes, 22" to 44" McCabe: 14x6
Rockford, q. c. g., late type; 18x8
Barnes, heavy duty; 15 & 24 spin-
ning, and others to 60".
Milling mchs., No. 25 Becker plain;
No. 0 Bristol hand; No. 0 Rockford
plain; No. 2 Van Norman duplex;
No. 3 Thurston dieing, and others.

560 W. Adams St., Chicago, Ill.

Oil extractors, centrifugal, (8).
Pipe machines, 2" & 6" Jarecki.
Punch & shears, No. 4 L. & A., d. e.,
1" thru 1/2"; No. 14 W., d. e., 15"
throat, and others.
Punch presses, No. 16 Bliss horning;
Nos. 18, 19 and 20 Bliss; No. 128
Ams; No. 10 Torris Wold, o. b. i.;
Nos. 48 and 50 Crosby; No. 57-S
Toledo s. a., and others.
Saws, 9x9 Sterling high speed; 12x12
Racine high speed, and others.
Screw machines, Nos. 2 & 3 Foster
(12); Nos. 52 & 53 Acme; No. 0
Brown & Sharpe; 9—No. 2 Brown
& Sharpe, others plain and auto.
Shears, No. 3 N. D. splitting, 1/2"
cap.; Pittsburgh alligator, 1".
Welders, both spot and butt.
Wire strait'g mche., 3/16" Shuster.

FOR SALE BY

Chas. Molitor Machinery Co., 118-124 S. Clinton St., Chicago, Ill.

LATHES.

36"x14' American, q. c. g.
33"x10' LeBlond, q. c. g., hvy.
30"x14' LeBlond, q. c. g., heavy.
24"x16' LeBlond, plain.
24"x12' Reed Prentiss, geared head.
26"x10' Niles, q. c. g.
24"x12' South Bend, taper att.
24"x10' Lodge & Shipley, grd. hd.
20"x10' American, geared head, q. c.
g., with crankshaft attach.
18"x8' Greaves Klusman, q. c. g., (2).
18"x8' Sidney, q. c. g.
30"x28' Niles boring lathes.

18"x8' Hendey, taper, draw-c. att.
16"x6' Hendey, taper attach.
14"x8' Hendey, taper, draw attach.
16"x8' Pratt & Whitney, q. c. g.,
taper, relieving attachment.
16"x6' Bradford, q. c. g.
15"x6' Von Wyck.
13"x11' Sebastian.
10"x4' Seneca Falls, taper attach.
8"x42" Rivett screw cutting, mill-
ing, grinding, etc., attachs.
10 Cataract, Pratt & Whitney, Rivett,
Elgin bench lathes.

MILLERS.

24" & 34" Bullard.
No. 3 LeBlond universal.
Nos. 1 & 2 Kemp Smith universal.
No. 2 Becker universal.
National Transit Co., plain.

No. 3 LeBlond plain.
No. 4H Becker vertical (2).
Gooley & Edlund, production.
24" Twin spline miller, P. & W.
Bristol, Whitney, U. S. hand.

RADIALS AND DRILL PRESSES.

36" American.
36" Mueller Tool Co.
30" Drees, Mueller.
24", 26" Prentiss, Cincinnati, etc.
2, 3 spdl. 24" Aveys, 1" cap. (8).

4 spdl. Gooley & Edlund, 1" cap.
1, 2, 4, 6 sp. Allen, Aveys, 1/2" cap. (8).
1, 2, 4 spindle Leland Gifford, 3/8" cap.
2, 4 spdl. Leland Gifford, 1/2" cap.
Large variety 14", 16", 20" drills.

GRINDERS.

Nos. 2 & 3 Brown & Sharpe univ.
No. 2 Wilmarth & Morman surface.
No. 11 Brown & Sharpe.
Nos. 2 & 3 La Salle.

Fitchburg, Landis, Greenfield.
18", 26", 40" disc, Gardner, Bealy.
No. 23 Brown & Sharpe cylinder.
Nos. 60 & 65 Heald cylinder.

SHAPERS AND BOLT CUTTERS.

18" Gould & Eberhardt.
20" Milwaukee.
18" Hollingworth.
17" Smith & Mills.

1" Landis bolt cutter.
2" National Acme.
1" and 1 1/2" Geometric.
4" Merrill pipe machine.

SCREW MACHINES AND TURRET LATHES.

Jones & Lamson dbl., sgl. spindle.
Nos. 0, 1, 2 B. & S. semi-auto.
No. 6 Foster, power long. & cross fd.
1" & 1 1/2" cap. Acme, b. g., frict. h.

Nos. 0, 1, 2, 3 Foster, Bardons &
Oliver, Garvin, W. S., P. & W.
1", 1 1/2", 2", 2 1/2" Cleveland auto.
Nos. 2A & 3A Warner & Swasey.

SECOND-HAND MACHINERY

Chas. Molitor Machinery Co.—Continued.

PUNCH PRESSES AND SHEARS.

- | | |
|------------------------------------|--|
| No. 6 Bliss, Stiles pattern. | 26" Bliss arch presses. |
| No. 5 Niagara inclinable. | 32" Stoll arch presses. |
| No. 4 Niagara inclinable. | No. 3 Black & Johnson. |
| No. 3 Long & Allstatte inclinable. | 10' power squ. shear, 18 ga. |
| No. 3 American inclinable. | 62" all steel power squ. shear, 10 ga. |
| No. 3 Loshbough-Jordan (2). | 52" Niagara power squ. shear, 1/4" ga. |
| No. 2 Loshbough. | 39" Niagara pwr. sq. shr., 3/16" ga. |

MISCELLANEOUS.

- Power beadrs, circle shears, slitting shears.
 60 lb. Bradley hammer, Grant rivet spinners.
 7"x36" steel corrugating machine, 4"x10' rollers.
 Toledo and Thomson spot welders: tapping machines, all sizes.
 Drill & lathe chucks, Stromberg periodograph, time clocks, time stamps, etc

FOR SALE BY

Reliance Machinery Sales Company

Brighton Road at Pennsylvania Ave., Pittsburgh, Pa.

- | | |
|---|---|
| Bolt cutter, Acme 2" class "A", 1/4" to 1". | Miller, No. 3 Hendey plain. |
| Bolt cutter, 3" Landis, single head, lead screw. | Miller, No. 4 Cincinnati plain. |
| Boring mills, 30" Bullard, 1 head. | Miller, No. 29 Oesterlein universal, v. a., m. d. |
| Boring mill, 24" Colburn, 1 head. | Miller, model "B" Becker, vert., s.p.d. |
| Boring mill, 72" Betts vert., 2 hds. | Miller, model "C" Becker vertical. |
| Boring mill, 90" Niles vert., 2 hds. | Miller, No. 32 Kempsmith mfg. |
| Bulldozer, No. 5 Williams & White. | Nut tapper, 2" National, 6-spindle. |
| Die slotter, 34" stroke, Garvin. | Pipe machine, Jarecki, cap. 1" to 4". |
| Drill, 24" Hoefel, sliding head. | Pipe machine, Cox, 2 1/2" to 8". |
| Drill, 26" Rockford, sliding head. | Pipe machine, Merrill, 2 1/2" to 12". |
| Drill, 36" Snyder, sliding head. | Planer, 24"x24"x 6' Gray, 1 hd. |
| Drill, 45" Snyder, sliding hd., t. a. | Planer, 30"x30"x10' Woodward & P. |
| Drill, 2' 6" Carlton high speed radial. | Planer, 36"x36"x 6' Cincinnati, 1 hd. |
| Drills, Amer. 4 & 5' radial, g. b., s.p.d. | Planer, 36"x36"x10' Gray, 1 head. |
| Drills, No. 2 Colburn, mfg. type, (4). | Press, No. 5 Toledo, o. b. i., 4" str. |
| Drill, Allen 4-spindle, No. 2 taper. | Press, No. 23 Stoll horning. |
| Drill, No. 2 Colburn 4-spdl. gang. | Press, No. 52 Bliss, s. s., 2" stroke. |
| Drillers, 5-spindle Detroit, (2). | Presses, Nos. 61 & 62 Bliss o. b., f. w. |
| Gear cutter, 24" Becker-B. auto. | Press, No. 73 Consolidated, o. b., 2 1/2" st. |
| Gear cutter, 36" Whiton. | Press, No. 74 Consolidated, o. b., 2 1/2" st. |
| Gear cutter, 60" Gould & E. | Press, No. 65 Consolidated, geared. |
| Grinder, 6"x32" Norton plain cyl. | Press, No. 87 Niagara screw. |
| Grinder, No. 6 Bridgeport, d. e., 220 v., 3 ph., 60 cy. | Punch, Cleve., 24" thrt., 1 1/2"x1 1/2" m. d. |
| Grinder, 14" Pratt & Whitney vertical surface. | Punch, Cleve., 15" thrt., 1 1/2"x1 1/2" m. d. |
| Hammer, 40 lb. Bradley, cush. helve. | Punch, Cleve., 72" thrt., 1 1/2"x1 1/2" m. d. |
| Hammer, 2500 lb. Morgan, st. forg. | Screw mch., No. 1 W. & S., with tools. |
| Lathe, 14"x8" Whitcomb-Blaisdell. | Screw machine, No. 2 Foster, pl. hd. |
| Lathe, 16"x8" Sidney, q. c. g. | Screw machine, No. 6 Foster, g. f. h., power feed. |
| Lathe, 16"x8" Sidney, q. c. g., grd. hd. | Screw machine, 1 1/2"-1 1/2" Cleveland, model "A", automatic. |
| Lathe, 17"x8" Sidney, hvy. duty, q. c. g. | Shaper, 16" Hollingworth, b. g. crank. |
| Lathe, 18"x8" Lodge & S., q. c. g., t. a. | Shaper, 20" Cincinnati, b. g. crank. |
| Lathe, 18"x10" Lodge & S., q. c. g., s.p. | Shaper, 21" American, b. g. crank. |
| Lathe, 18"x10" Reed, q. c. g., d. b. g. | Shaper, 24" Milwaukee, b. g. crank. |
| Lathe, 20"x10" Lodge & S., q. c. g. | Sh., No. 20 Quickwork, cap. 12 gauge |
| Lathe, 24"x12" Rahn & L., q. c. g. | Shear, 48" Bertsch, 18" gap, 1/4" cap. |
| Lathe, 26"x18" Bridgeford, quick change gear, double back gear. | Shear, squaring, 96" Stoll, 16 ga. |
| Lathe, 30"x12" Johnson, triple grd. | Shear, squaring, 96" power, 20 ga. |
| Lathe, 34"x12" Le Blond, trip. grd. | Threader, Geometric, cap. 1/4" to 1 1/2". |
| Lathe, 36"x18" American, grd. hd. | Turret lathe, 24"x24", J. & L., flat head, s. p. d. |
| Miller, No. 1 Milwaukee universal. | Upsetter, 3" Acme. |
| Miller, No. 2 Cincinnati, p. vert. | |
| Miller, No. 3 Cincinnati plain, v. a. | |

Our warehouse is full of bargains. What have you for sale?

SECOND-HAND MACHINERY

FOR SALE BY

Donahue Steel Products Co., - 204 N. Jefferson St., Chicago, Ill.

Bulldozers, Nos. 1, 2, 3, 4, 5 & 6 Williams & White.
 Hammers, cushioned helve, 25, 40, 60, 80, 100 & 200 lb. Bradley.
 Hammers, upright, 50, 100, 200, 300 & 500 lb. Bradley.
 Hammers, compact, 30 lb. Bradley.
 Hammer, crank lift drop, Williams & White No. 5.
 Hammer, board lift drop, 800 lb. Williams & White.
 Punch, s. e., No. 1 Long & A., 1 1/2" thru 1", arch. jaw, motor drive, 3" stroke.
 Punch, Rock River, 1 1/2" thru 1", 24" throat.
 Punch, s. e., No. 3 Long & Allstatter, 3/4" thru 7/8", 36" thrt., architectural jaw.
 Punch & shear, d. e., No. 14 Williams & White, 1 1/2" thru 1".
 Saws, hot, Nos. 2 & 3 Ajax.
 Shears, bar, Long & Allstatter, table cast on slant, cap. 1 1/2" round.
 Shears, bar, Long & Allstatter No. 2, table cast on slant, cap. 2" round.
 Shear, alligator, Dolger & Kirstin, capacity 1 1/2" round.
 Upsetters, two 1 1/2" Ajax; one each 1" Ajax, 1 1/2" National, 1" Acme, 2" Acme.
 Threading machines, one No. 1; one 1 1/2" sgl. spdl. Landis; two 1" dbl. spdl.
 Landis, with lead screws; one 3" single spindle Morgan Reliance.
 Thread rollers, one each 1/2", 3/4", 1" and 1 1/2".

All of the above in our Chicago stock.

FOR SALE BY

**Wm. C. Johnson & Sons Machinery Co.,
 1001-3-5 N. Sixth St., St. Louis, Mo.**

No. 2 Kemp Smith.
 No. 2 Brown & Sharpe plain.
 No. 4 Cincinnati plain, single pulley.
 No. 3-B Brown & Sharpe.
 No. 33 Kemp Smith.

MILLERS.

No. 2 Rockford full universal.
 No. 2 Knight vertical.
 Nos. 0 and 3 Burke bench.
 Whitney hand miller.

3' arm Mueller, radial, s. b. drive.
 5' arm Prentice radial.
 3 1/2' arm post drill.

DRILLING MACHINES.

34" sliding head.
 24" Aurora, sliding head.
 20" Barnes.

No. 2 Cincinnati universal.
 8" Heald rotary, with magnetic ck.
 10"x36" Thompson universal.
 No. 6 St. Louis.

GRINDERS.

30"x84" Diamond face grinder.
 12"x42" Landis universal.
 Yankee twist drill.

24"x24"x 6' Lodge & Davis.
 32"x30"x 7' Whitcomb.

PLANERS.

36"x36"x10' Flather.
 60" open-side Detrick & H., 3 heads.

Smith & Mills, all sizes.
 15" Hendey, arranged for motor.
 20" Kelly.

SHAPERS.

16" Flather, 4 speeds.
 16" Cincinnati.

9"x12" Sundstrand.
 14"x 6" Monarch, q. c.
 14"x 6' Sidney, q. c.
 20"x 9' Cisco, q. c.
 21"x 8' Sidney, q. c.
 24"x12" Advance.
 26"x13' Putnam, q. c., ar. for motor.

LATHES.

26"x16' Niles, plain change.
 28"x 8' Greaves & Klusman, q. c.
 30"x15' American, q. c.
 33"x20' Draper, triple geared.
 36"x18' Prentice Bros., t. a.
 20" Pit lathe.

MISCELLANEOUS.

Boring machine, horizontal, No. 2
 Pawling & Harnischfeger.
 Boring mill, No. 1 Bussie horiz.
 Broacher, No. 1 LaPointe.
 Bulldozer, 75-ton Lourie hydraulic.
 Engines, Corliss, 75 to 200 h. p.
 Magnetic pulley, 24"x26".
 Press, portable, hydraulic.
 Punch, No. 14 Williams-White, dbl.

Punch, No. 5 Long & Allst., 5" thrt.
 Punch, No. 7 Long & Allst., 4" thrt.
 Riveter, 24" Shepard.
 Screw machine, No. 6 Woods.
 Sheet metal cutter, No. 1 Gray.
 Shear, squaring, 10' Ohl, 3/16 cap.
 Tilted turret lathes, Wood, (3).
 Turret, 28" Gisholt, latest.

SECOND-HAND MACHINERY

FOR SALE BY

The O'Brien Machinery Co.,

113 N. Third St., Philadelphia, Pa.

Drill, 32" Aurora, motor driven, tapping attachment.
 Hammer, 100 lb. Massillon, steam.
 Lathe, 22"x11' Lehmann, geared head, taper attachment.
 Lathe, 24"x12' Schumacher & Boye.
 Lathe, 26"x21' Whitcomb-B., ntr.dr.
 Miller, No. 3-H LeBlond plain.
 Miller, No. 3-B Hendey plain.
 Miller, No. 3 Kempsmith universal.
 Pipe machines, 2", 4", 6", 8" & 12"
 Oster, Cox, Eaton-Cole & Burnham and Jarecki makes, belt or motor driven, complete stock.
 Planer, 36"x36"x12" Woodward & Powell, motor driven, 3 heads.
 Presses, Nos. 18, 19 and 20 Bliss.

Planer, 34"x54"x14' Pond Machine Tool Co., two heads.
 Press, No. 54 Toledo gr. str. side.
 Punch and shear, No. 3 Hilles & J., dbl. end, motor dr.; punch end, 42" thrt., cap. 1 1/2" thru 1"; shearing end, 36" thrt., cap. 1" plate, 2 1/2" round, 7"x1 1/2" flat, 5"x5"x 1/2" angle.
 Radial drill, 36" Gang.
 Radial drill, 5' Mueller.
 Shapers, 12", 14", 16", 21" and 24" stroke, assorted makes.
 Trimming press, No. 75 1/2 Bliss, straight side, with side shear attachment.
 Turret lathe, No. 6 1/2 Bardons & Oliver, wire feed, cabinet base.

FOR SALE BY

Peninsular Machinery Co., 429-31 E. Jefferson Ave., Detroit, Mich.

LATHES.

9"x14' Porter-Cable, (4).
 13"x 5' South Bend, l. c. g.
 13"x 5' Champion, l. c. g.
 14"x 6' Prentice, l. c. g., (2).
 14"x 6' Bradford, q. c.
 14"x 6' Carroll-Jamieson, (5).
 14"x 6' Fether, l. c. g.
 14"x 6' Reed, l. c. g., (5).
 14"x 6' Rockford, l. c. g.

14"x 8' Monarch, l. c. g., taper.
 16"x 8' Bradford, l. c. g.
 16"x 8' LeBlond, quick change.
 17"x 8' LeBlond, q. c.
 17"x10' LeBlond auto.
 18"x8' Monarch, q. c. (2).
 21"x11' LeBlond, all geared, (2).
 26"x10' LeBlond crankshaft, (2).
 3 1/2x36 Lo-Swing.

DRILLING MACHINES.

14" Excelsior.
 22" Barnes, s. h., b. g., p. f.
 22 1/2" Barnes s. h., b. g., p. f.
 26" Barnes, s. h., b. g., p. f.

26" Hoefer, st. h. d., (2).
 No. 3 Avey, h. s.
 36" American sens. radial.
 No. 3 Haugh multiple.

MILLING MACHINES.

No. 6 Whitney hand.
 United States hand.
 No. 0 Steptoe, b. g. and p. f.
 No. 0 Farwell q. c.
 Briggs type A, (2).
 No. 12 Brown & Sharpe.
 No. 32 Kempsmith.

No. 1 1/2 Cincinnati plain.
 No. 2 Brown & Sharpe plain.
 No. 3 Hendey plain.
 No. 1-B LeBlond univ., cone type.
 No. 3-H LeBlond univ., cone type.
 48" Newton 2-spindle.

TURRET SCREW MACHINES.

1" Dreses, p. h. and p. f.
 4" Cleveland auto., type B.
 1 1/2" Defiance, f. h.

2" Milholland, f. h.
 2x26 Pratt & Whitney, f. h.
 2 1/2x26 Pratt & Whitney, a. c.

GRINDERS AND POLISHERS.

No. 1 LeBlond plain.
 No. 1 Brown & Sharpe universal.
 No. 1 Norton universal.
 6x32 Norton plain.
 No. 2 Gardner disc grinder.
 No. 24 Gardner vertical.
 No. 70 Heald internal.

No. 50 Heald cylinder.
 No. 210 Heald magnetic.
 20" Blount wet grinders, (2).
 No. 4 Webster & Perks polishing.
 Bennett & O'Connell dbl. sp. pol.
 No. 23-B Valley City disc.
 No. 220 Badger automatic.

MISCELLANEOUS.

Band saw, 6" Napier.
 Cutting-off mch. 4" Hurlbut-Rogers.
 Filer, No. 2 Cochrane & Bly.
 Gear tester, bevel, Gleason.
 Hammer, drop, No. 5 Williams-W.
 Keyseater, No. 1 Davis.
 Lapping mchs., Bethel-Player, (2).

Metal cutter, No. 1 Gray.
 Press, No. 40 Perkins, o. b. i.
 Screw slotter, No. 1 National Acme.
 Threader, 2-sp. Webster & Perks.
 Threader, H. & G. 9/16 automatic.
 Tumbling barrels, No. 3-S Globe, (2).

SECOND-HAND MACHINERY

FOR SALE BY

The Randle Machinery Co., 1723 Powers Street, Cincinnati, Ohio

ENGINE LATHES.

14"x 6' Lodge & S., q. c.....	\$ 450.	20"x10' American, q. c., single pulley drive, geared head..	\$ 750.
15"x 6' Flather, loose change.	200.	25"x12' LeBlond, quick chge.	1,100.
16"x 8' LeBlond, loose chnge	300.	27"x18' LeBlond, quick chge.	1,350.
22"x18' Niles, l. c., taper att..	650.		

PLANERS.

32"x32"x14' American, 2 heads.....	\$1,250.
36"x36"x14' American, 2 heads.....	1,350.
36"x36"x18' Niles, double housing, each housing equipped with 2 rail heads, motor drive.....	1,500.
42"x42"x26' Cincinnati, 2 heads.....	2,250.
60"x60"x20' Niles, 4 heads, motor drive.....	3,000.
Pedrick & Ayer open side, planes 30" wide, bed 11' long.....	1,000.

MISCELLANEOUS.

Bolt cutter, Acme 4" sgl. hd....	\$ 750.	Miller, No. 3 Cincinnati pl....	\$ 800.
Boring mill, 60" Niles vert., d. c. motor drive, with mtr....	750.	Radial drill, 6' Niles full univ., d. c. motor dr., with motor...	750.
Drill press, 45" upright, back geared, power feed.....	300.	Shaper, 12" Pratt & Whitney crank, traveling head.....	300.
Drill press, 24" Aurora upright, back gear, pwr. fd....	275.	Shaper, 20" Smith & Mills, back grd. crank, late type...	800.
Grinder, No. 60 Heald cylinder	750.	Shaper, 24" Barker, b. g. crk.	750.
Radial drill, 3' Dreses, practically new.....	1,000.	Turret lathe, 24" Gisholt, d. c. motor drive, with motor....	500.

Many other bargains. Send us your requirements.

FOR SALE BY

Brown Machinery Co., - - - 2323 N. 9th St., St. Louis, Mo.

Boring, drilling & milling machine, No. 10 Beaman-Smith Co. horiz., 34" bar, splendid condition. Price.....	\$1500.
Die sinking machine, No. 5 Jackson. Price.....	500.
Drill, Allen B-6, six-spindle, b. b., cap. 29/32", splendid condition. Price.....	600.
Drill, Avey No. 2, single spdl., b. b., tap, attach., good condition. Price.....	200.
Drill & tapper, Barnes 26", all geared, good condition. Price.....	300.
Drill, Baush No. 3 multiple, cap. 30 spdis., rectangular hd. 20x40". Price.....	1500.
Grinder, No. 14 Gardner, b. b., disk, dry, 20" disks, good cond. Price.....	400.
Grinder, No. 6 Besly two-spindle disk, 20" disks. Price.....	350.
Grinders, three No. 2 Gardner single spindle, double disk, with universal tables; good condition. Price, each.....	175.
Grinder, LaSalle automatic surface, good condition. Price.....	275.
Grinder, No. 12 B. & S. 8x36" pl., for wet grinding; good condition. Price.....	450.
Grinder, No. 1 Brown & Sharpe universal, 10x24; good condition. Price.....	375.
Grinder, No. 14 Besly single spindle ring wheel. Price.....	400.
Hammer, size D 125 lb. Dupont, belt driven upright, new, never used. Special price.....	500.
Hoist, new Flory No. 14, 8x10" d. c., d. d. with boiler; A. S. M. E. for 125 lbs. New. Special price.....	1750.
Lathe, 18"x 8' Lodge & S., q. c. g., d. b. g.; good condition. Price.....	475.
Lathe, 16"x 9' Lehmann, d. b. g., q. c. g.; good condition. Price.....	475.
Lathe, 26"x14' Hamilton, q. c. g., d. b. g.; good condition. Price.....	1200.
Miller, No. 2 Cincinnati b. g. plain, 28x10x19; good condition. Price.....	500.
Miller, No. 1B Fox, hand & pwr. fd., 18x6x14; new, never used. Price.....	400.
Planer, 54"x54"x12' Pond, 4 heads; good condition. Price.....	2500.
Polishing & buffing machines, five New Britain drop head, good condition. Price, each.....	50.
Punch & Stake riveter, No. 3 Hilles & Jones 60" throat, rapid action; cap. full depth throat 1/2" in 7/16"; 16,000 lbs.; two stakes. Price.....	1500.
Shear, Niagara 8', 18 ga., foot power, square, splendid condition. Price.....	275.
Shear, Marshalltown No. 134 rotary splitting, cap. 1/2" plate; 4' throat. Arranged for motor drive. Like new. Price.....	750.

SECOND-HAND MACHINERY

FOR SALE BY

D. M. Osborne Machinery Co.,

P. O. Box 853, Station "H"

Cleveland, Ohio

AUTOCALL SYSTEM.

Model 16, 60-station Autocall System arranged for 110 volts, d. c., complete with 1660-D central station, relay, 23-4" gongs, 16-6" gongs, 11-8" gongs, and one whistle; all in first class condition; approximate new cost \$1000.00; will sell for less than half cost.

FOR SALE BY

Tubor, Velick & Co., Inc., - - 628-630 W. Lake St., Chicago, Ill.

Telephones: Monroe 4199-6813. No Branches

PUNCH PRESSES.

No. 3 Walsh.
No. 4 American Can.
No. 4 Consolidated.
No. 7 Beatty, cap. 1 1/2" in 1".
No. 15 Torris Wold.
Perkins punch presses, 1/2" str. (20).

Nos. 13 & 15 single end punches.
Long & Allstatter horn punch, capacity 1 1/2 x 1.
No. 17 Williams-White double end punch & shear.

DRILL PRESSES.

14" Excelsior.
20" b. g., p. f., new, \$130.
20" & 26" Weigel.
26" Hoefler.

30" Reed-Prentice.
Demco high-speed drills.
Bench type drills.

MILLING MACHINES.

No. 2 LeBlond.
No. 2 Cincinnati vertical.
No. 2 Cincinnati universal.

No. 3 Kempsmith.
A number of hand millers.

LATHES.

11" x 5' Sterling.
15" x 8' Sidney, q. c.
16" x 6' Sidney, q. c., (2).
16" x 6' Monarch q. c.
16" x 8' Canedy-Otto.
16" x 6' Hendey, q. c., taper att.
16" x 8' South Bend, q. c.
17" x 8' Sidney, q. c.

18" x 8' Chard.
19" x 10' Sidney, q. c., (2).
20" x 8' Lodge & Shipley, geared head, s. p. drive.
24" x 10' Canadian, q. c., d. b. g., (3).
25" x 10' Sidney.
Dalton Six.

PLANERS.

24" x 24" x 6' Pond.
24" x 24" x 8' Putnam.

30" x 30" x 8' Fitchburg.
36" x 36" x 7' Flather, 2 heads.

SHAPERS.

16" Smith & Mills.
16" Ohio.
16" Whipp, b. g.

24" Rockford.
24" Kelly.

SCREW MACHINES.

No. 2 Pratt & Whitney, hand.

No. 2 Smith, hand.

GRINDERS.

No. 2 Manhattan surface.
No. 14 Besly, disc.

10x36 Thompson, new.
Emery grinders, #2 and up.

WOOD-WORKING MACHINERY.

Band saws, 36" Famous, new, (10).
Boring mills, Andrew, (3).
Glue jointer, Falls.
Jointers, 4" D. C. Walcott.

Planer, 30" Berlin.
Stickers, 6 and 9".
Swing saws, Porter, (4).

MISCELLANEOUS.

Buffers, U. S. and Westinghouse, 5 h. p., b. b.
Cold saw, No. 20 Lea-Simplex.
Hack saws.
Keyseaters, Davis.
Lift trucks, Barrett, 1 ton cap.
Motors, a. c. and d. c.

Paper cutter, Chandler & Price.
Punch & shear, No. C Cleveland.
Radial drill, 3 1/2", Canedy-Otto.
Radial drill, 3 1/2" Cin'ti Bickford.
Time clocks, International.
Turret lathe, Gisholt.
Woodworking machines.

Leather belting. Pulleys, shafting and hangers.

SECOND-HAND MACHINERY

FOR SALE BY

McDonald Machinery Co., 1531-33 N. Broadway, St. Louis, Mo.

Cut-off mchs., Modern 1", Davis 6".
 Drill, Detroit 5-sp. horiz.
 Drill, Rockford horiz. boring & drill.
 Drill, 32" Hoefler, sgl. hd., tapp. at.
 Drills, 4-sp. 24" gang, 1, 2, 3 and 6 spindle, h. s., b. b.
 Drills, 5' Americ, 3' C.-O. rad.
 Drill, radial, 3-3' American, q. c.
 Furnace, Holcroft Electric annealing, 92 k. w.
 Gear shaper, 36" Fellows.
 Grinder, Persons-Arter autom. surf.
 Grinders, 25 Heald piston ring.
 Grinders, Modern 8x18, Landis 10x36.
 Grinder, Landis 12x48, Fitchburg cyl.
 Lathes, Hamilton 27x14, Sidney 27x10, Bridgeford 27x9, Advance 18x8, q. c.
 Lathes, Seneca Falls 14x6, q. c., mtr. drive tool room, collets, etc. (2).
 Milling mchs., Milwaukee No. 1A, Hendey No. 2G univ., Ohio No. 30.

Milling mch., Becker "SD" vert., rotary table, 17800 lbs.
 Milling mch., Milwaukee No. 2B vertical.
 Milling mch., LeBlond No. 4 plain.
 Planers, 36"x36"x23' Sellers, 2 heads; 42"x42"x16' Pond, 2 heads.
 Presses, Ferracute No. 2 str. bck., Swaine No. 40 arch, Rockford No. 2 o. b. i.
 Punches, H. & J. No. 0, 14" thrt., 1/2" in 1/4"; Felber 1" in 1" punch & slit shr.; Scully 20" thrt., 1" in 1".
 Shapers, 26" automatic open side, 16" Milwaukee, 7" Rhodes.
 Shaper, Milwaukee 24", b. g.
 Shears, 60" thrt. rotary slitting (2).
 Thread miller, Lees-Bradner No. 4.
 Welder, Spot-W., Toledo, 20 k. w.
 Welder, Butt-Nat'l, Federal, 3/4" rds.

FOR SALE BY

Norton-Broadway Machinery Co., 236-38 Broadway, Cincinnati, O.

LATHES.

13"x8' Willard, std., c. r. \$ 290.
 13"x21"x8' Willard, gap, new... 550.
 16"x8' Hendey, overarm, q. c... 550.
 16"x9' Bradford, qk. ch., taper, raising blocks 650.
 17"x8' National, q. c. 275.
 19"x8' Fay & Scott, loose ch .. 255.
 20"x10' Hamilton, q. c. 550.

24"x24' Niles, loose change... \$ 650.
 26"x26' Niles, loose change... 650.
 30"x12' Lodge & Davis, loose change 375.
 36"x16 1/2' Niles, triple geared, motor, nearly new.
 48" raised to 62"x 18' New Haven, 11' centers, tri. grd., 1250.

MILLING MACHINES.

No. 2-B Brown & S., sgl. pulley \$ 775.
 No. 3 Brown & Sharpe plain .. 490.

No. 5 Brown & Sharpe plain... \$ 650.
 No. 4 Cincinnati, old st. univ. 450.

DRILLS AND RADIALS.

20" Silver, b. g., p. f. \$ 100.
 24" Hoefler, 2-sp. nearly new... 325.
 42" Bickford, sgl. pulley 550.
 28" Aurora, sliding head, tap... 275.
 28" Aurora, no tapping 240.
 6 1/2' Niles univ., with motor.... 1250.

30" Cincinnati-Bickford single pulley radials, tapping attachment, excellent condition, late type.
 5 1/2' Niles univ. radial, arranged for motor \$ 850.

PLANERS.

16"x18"x48" Hendey..... \$ 275.
 26"x26"x 6' Gray. good cond.. 700.
 36"x36"x12' W. & P., 1 head... 725.

32"x32"x20' Cincinnati, 2 hds.
 42"x42"x26' Cincinnati, 2 hds.

BORING MILLS.

84" Niles vertical, 2 heads \$1650.
 60" Betts vertical, 2 heads 850.
 42" Bullard vertical, 2 heads 850.
 42" Colburn vertical, 2 heads 800.

36" Niles, vertical, 2 heads.... \$ 600.
 54"x3 1/2" Niles hor., fine cond.. 750.
 2" bar Niles horizontal, good condition 385.

MISCELLANEOUS.

Air compressors.
 Brake, 6' Robinson.
 Grinder, No. 4, 36" Brown & Sharpe.
 Grinder, Bath.
 Hack saws, 6"x6" Peerless, Sterling.
 Hammer, 1100 lb. Eric single frame, steam, nearly new, \$1000.
 Keyseater, No. 2 Davis.
 Press, forcing, 15-ton Lucas.

Punch & shears, 4 sizes, Long & A.
 Screw machines, Jones & Lamson and Gridley automatic.
 Shaper, 14" Rockford.
 Shaper, 16" Hamilton.
 Shaper, 20" Queen City.
 Shears, 60" Quickwork.
 Turret, No. 6 Warner & S., A1, \$550.
 Wheel press.

SECOND-HAND MACHINERY

FOR SALE BY

Fitzsimmons & Cole Machinery Company

1208 House Building,

Pittsburgh, Pa.

Air compressor, 10"x12", 164 cu. ft.
Bending roll, angle, 4"x4"x4".
Bending rolls, W. & R. 12"x7/16".
Bending rolls, H. & J. 12"x4".
Bending rolls, 6"x4".
Bolt cutters, 1 1/2" to 4" Landis.
Borer, car wheel, 48" Niles.
Boring mill, 30" Bullard turret.
Boring mill, 36" Niles.
Boring mill, 42" King, m. d.
Boring mill, 52" King, m. d.
Boring mill, 60" Betts, 2 hds., m. d.
Boring mill, 84" Bullard.
Boring mill, 144" Pond, 2 heads.
Drill presses, 24" to 36".
Drill press, No. 25 Foote-Burt.
Drill press, 1-D Colburn.
Drill, radial, 4" Prentice.
Drill, radial, 5' Reed Prentice, s.p.d.
Flanger, McCabe, 3".
Gear hobber, 16" Cincinnati plain.
Gear shaper, No. 61 Fellows.
Grinder, Landis crankshaft, 16"x48".
Grinder, Landis crankshaft, 16"x68".
Grinder, Landis plain, 12"x52".
Hammers, 600 lb. to 6000 lb.
Hammer, 800 lb. Merrill board drop.
Lathe, 16"x 6" South Bend.

Lathe, 27"x10" Lodge & S., q. c. g.
Lathe, 50"x34" Pittsburgh.
Lathe, axle, No. 3 Niles.
Miller, No. 3-A Garvin plain.
Miller, Ingersoll slab, 84" drum type.
Pipe machines, 2" to 12".
Planers, 30" to 12".
Planer, rotary, 48" Newton.
Planer, plate, Cleveland 23"x1".
Press, No. 74 1/2 Bliss.
Punch & shear, Cinti, 4" thru 4".
Punch & shear, No. "A" L. & A., 2" thru 1 1/2".
Punch & shear, Hilles & Jones, 1 1/2" thru 1 1/2".
Punch, hor., Cleveland, 1" thru 1".
Riveter, 80-ton Hanna, 102" reach.
Riveter, 70-ton Hanna, 18" reach.
Saw, 18" Higley, cold.
Shaper, 24" Cincinnati, back geared.
Shear, angle, 8"x8"x1 1/2" L. & A.
Shear, guillotine, 24" United.
Shear, plate, 9"x3" Morgan.
Straightener, 30" Waterbury-F. 3".
Testing machine, 100,000 lb. Olsen.
Turret lathe, No. 4 W. & S. univ.
Turret lathe, No. 6-A Potter & J.
Welder, butt, Thompson, cap. 1 1/2" rd.

Weigel Double-Wheel "Trukaster"

Has heavy plates and axles.
Easiest running, strongest and
most durable double-wheel
caster made. Lasts three times
as long as others.

"Kwality Kaster"

(See Illustration)

The strongest and most dura-
ble single caster. Won't crush
or break. Swivels on steel
machined rollers.

Write for Price List

**THE HAMILTON
CASTER & MFG. CO.
HAMILTON, OHIO**



"Factory" Rebuilt Tools

Every Machine Rebuilt in a Machine Tool Factory

The following tools are exceptional bargains. The majority of these machines have been used exclusively in our own plant, where they have received the very best of care and attention, and all tools in this list have been completely overhauled and rebuilt right here in our own shop, consequently they cannot be classed with the average second-hand machine. They are factory rebuilt tools of the very highest quality, and many real bargains are included in this list.

LATHES

- 1-16"x 8' American, quick change gear, single bk. grd. head and taper att.
- 1-18"x 8' American High Duty, quick change gear, with patented grd. head.
- 1-18"x10' American High Duty, quick change gear, with patented grd. head.
- 1-18"x14' American turning lathe, without screw cutting mechanism.
- 1-20"x10' American High Duty, quick change gear, with patented grd. head.
- 1-20"x12' American, quick change gear, with single back geared head.
- 1-24"x12' Greaves-Klusman Heavy Pattern, qck. chg. gr., dbl. bk. grd. hd.
- 1-24"x14' American High Duty, with single back geared head.
- 1-30"x10' American High Duty qck. chg. gr. with double back geared head.

RADIAL DRILLS

- 1-3' American Ball Bearing Sen. Radial, with elev. table and tapping att.
- 1-3' Reed-Prentice Plain Radial, with tapping att. and gear box drive.
- 1-3' Mueller Plain Radial, with tapping attachment and gear box drive.
- 1-5' Fosdick Plain Radial, with tapping attachment and cone pulley drive.
- 1-6' Bickford Plain Radial, with tapping attachment and gear box drive.
- 1-6' Fosdick Plain Radial, with tapping attachment and gear box drive.
- 1-8 spindle Niles-Bement-Pond Boiler Plate Drill.

MILLING MACHINES

- 1-No. 3 LeBlond Plain, with 3-step cone, friction back gears.
- 1-No. 3 Cincinnati Vertical Milling Machine with single pulley drive.

PLANERS

- 1-36"x36"x14' American Pl. with 2 hds. on cross rail and 2 sp. countershaft.
- 1-42"x36"x26' American Planer with two heads on cross rail, two side heads, and two speed countershaft.
- 1-48"x36"x18' American Planer with two heads on cross rail, two side heads, and two speed countershaft.
- 1-48"x48"x26' American Heavy Pattern Planer with two heads on cross rail, two side heads, and two speed countershaft.
- 1-72"x60"x31' Pond Planer with two heads on cross rail and countershaft.

SHAPER

- 1-16" American Back Geared Crank with table support, cone pulley drive.

FLAT TURRET LATHES

- 1-No. 2 (2"x17") Warner & Swasey Flat Tur. Lathe, 3-step cone, friction hd.
- 2-2"x24" Jones & Lamson Flat Turret Lathes, with 3-step cone, friction hd.

In addition to the above we have a number of miscellaneous tools that are exceptional "buys"

Many of the above tools have been used but very little, and are practically the equivalent of new machines. We repeat, there are many unusual and exceptional bargains in this list that somebody is going to get the benefit of. Write us immediately for descriptions, illustrations and prices, so you will be one of those to get the benefit of these bargains before they are gone.

The American Tool Works Co.

Cincinnati, U. S. A.

Builders of LATHES — SHAPERS — RADIAL DRILLS

The Best that Money Could Buy

**One Hundred and Sixteen 90% New, or Better,
Motor Driven Tools**

In the Plant of the S. S. E. Co., Erie Ave. and B Street, Philadelphia

Although most of these machines are motor driven, with 220 volt, 60 cycle, 3 phase motors attached, they may be belt driven if desired.

Moline 14-spindle Rail Drill.
Cincinnati-Bickford 42" Radial Drill.

Powell 24"x6' Planers.

Fellows 36" Gear Shaper.

Gould & Eberhardt 18" Gear Hobbers.

Hendey 14" & 16" Geared Head Lathes.

Lodge & Shipley 14" and 18" Selective Head Lathes.

Potter-Johnston No. 2P Automatic Piston Lathe.

Gorton No. 1A Engraving Mch.

General Electric 400 ampere Welding Set.

Wilson 600 ampere Arc Welding Set.

Warner-Swasey Nos. 2A & 3A Turrets.

Warner-S. No. 4 Univ. Turrets.

Pratt-Whitney 6" Vert. Shaper.

Pratt-Whitney 4½"x12" Thread Millers.

Landis 4" spindle No. 40 Floor Boring Machines.

Giddings & Lewis No. 0 Horizontal Boring Mill.

Gridley ¾ & 1¼" Auto., 4-spdl.

Brown & Sharpe Nos. 2G & 0G Automatics.

Diamond hvy. 84" Face Grinder.

Landis 12"x36" Plain Grinder.

Brown & S. No. 10 Pl. Grinders.

B. & S. No. 2 Surface Grinder.

Cincinnati No. 4 Vert. Millers.

B. & S. No. 2B Plain Millers.

B. & S. No. 2A Univ. Millers.

Brown & Sharpe No. 4B and

No. 4B Heavy Plain Millers.

B. & S. No. 4A Univ. Miller.

Moline 6-spdl. Cylinder Bore.

Natco 34-spdl. No. 30 Drills.

A Finer Lot of Used Tools Was Never Offered

 **GO DIRECT TO PLANT TO MAKE INSPECTION**

For information by mail or telephone, apply to

Monarch Machinery Co.

"Philadelphia's Machinery Merchants"

300 North Third Street,

PHILADELPHIA, PA.

Executives, Attention!

FORGING MACHINERY

- BULLDOZERS:** Williams & White No. 2 & No. 4, belt drive.
- HAMMERS:** Bradley Helve, 25, 60 and 80 lb.
Bradley Upright Strap, 75 and 100 lb.
Bement-Miles Single Frame Steam Forging,
800 and 2000 lbs.
Bement-Miles Steam Drop, 1500 lb.
- PUNCH & SHEAR:** Reade Single End, 50" throat, belt drive, capacity to punch 2" thru 1".
- SHEARS:** Hilles & Jones No. 3 Guillotine, arranged for motor drive. Capacity 8"x1¼" or 2½" square.
Pusey & Jones Guillotine, belt drive, capacity 3" square.
Carlin Alligator, 1¾" Capacity.
- UPSETTER:** Acme ¾" Steel Bed.

It's the value you receive for your money that should interest you in these tools.

HEAVY MACHINE TOOLS

- BORING MILLS:** Pond-Plainfield 84" Vertical, 2 swivel heads, table 72"x6½". Distance under rail 52". Belt drive.
Niles Tool Works 90" Vertical, 2 swivel heads, table 72"x6¼". Distance under rail 58". Belt drive.
Niles 10' Vertical, 2 Swivel Heads, table 82"x6". Distance under rail 80". Belt drive.
Detrick & Harvey Horizontal Boring, Drilling and Milling Machine, bar 5" dia.
- LATHES:** Johnson 50"x49' 6" Triple Geared, belt drive, 40' between centers. 6" Raising Blocks, which increase the swing to 62". Weight about 56000 lb.
Putnam 52"x25' Triple geared, arranged for direct motor drive with 20 H. P. Variable Speed Motor, 375/1500 R. P. M., 230 Volts, D. C. Weight about 39000 lb.
- TURRET LATHES:** Jones & Lamson 2¼"x24" and 3"x36" Flat Tur.
Gisholt 24"x6', with 6¼" hollow spindle.
- PLANERS:** Pond 48"x48"x22', 2 rail and side heads. Table 36" wide, 7" thick. Weight about 43000 lb.
Cincinnati 36"x36"x12', 1 rail and 1 side head.

RUSSELL MACHINE COMPANY

28th St. & A. V. R. R., PITTSBURGH, PA.

ReMANUFACTURED - (ORIGINATED BY US) - MACHINE TOOLS

REG. U. S. PAT. OFF.

In our stock we have more than 2000 high grade machine tools ready for immediate delivery. All are bargains and every one is guaranteed. Write for our latest complete "Green List" and prices.

LATHES

- 2-13" x 5' Willard.
- 2-14" x 6' Rockford.
- 1-14"-16" x 8' Lodge & Shipley.
- 5-18" x 8' Boye & Emmes.
- 30-20" x 8' American.
- 14-26" x 8' LeBlond.
- 5-20" x 12' American.
- 5-20" x 16' American.
- 20-21" x 10' LeBlond.
- 10-34" x 11' Cisco.
- 3-24" x 12' Providence.
- 1-24" x 15' Chard.
- 1-24" x 24' Lodge & S. selective hd.
- 7-25" x 10' LeBlond.
- 10-25" x 12' LeBlond.
- 24-26" x 10' Canada.
- 10-26" x 18' Bridgeford.
- 18-32" x 12' Pittsburgh.
- 1-36" x 18' Putnam geared head.
- 4-36" x 30' Pittsburgh Geared Hd.
- 3-36" x 37' Niles Bement Pond.
- 1-51" x 20' LeBlond.
- 1-56" x 64" x 18' Johnston.
- 1-60" x 18' Johnston.

MILLERS

- 2-No. 1B Milwaukee.
- 5-No. 2 Kempsmith.
- 3-No. 2 Rockford.
- 2-No. 29 Ohio.
- 6-No. 2-B Hvy. Brown & Sharpe.
- 4-No. 3 Kempsmith.
- 9-No. 3-B Hvy. Brown & Sharpe.
- 1-No. 3B Milwaukee, Universal.
- 2-No. 4 Cincinnati.
- 2-No. 4 LeBlond.
- 3-No. 4-B Becker.
- 2-No. 3 Cincinnati Vertical.
- 2-No. 4 Cincinnati Vertical.
- 4-No. 5-C Becker.
- 3-No. 6 Becker.

BORING MILLS—Vertical

- 2-24" Bullard "New Era."
- 1-42" Gisholt.
- 1-44" Niles Bement Pond.

BORING MILLS—Vertical—Cont.

- 1-48" Gisholt.
- 3-52" King.
- 1-54" Bullard.
- 2-62" King.
- 3-72" Cincinnati.

BORING MILLS—Horizontal

- 3-3" Foote-Burt.
- 1-No. 3A Universal.
- 1-No. 3 Rochester Floor Borer.

DRILL PRESSES

- 1-20" Barnes all geared.
- 1-34" Barnes.
- 1-36" Snyder.
- 1-No. 24 Foote-Burt.
- 1-No. 25 Foote-Burt.
- 6-No. 23 2-spd. Henry & Wright.
- 1-3-spindle Henry & Wright.
- 4-6 spindle Allen.

PLANERS

- 1-24" x 24" x 6' American.
- 1-24" x 24" x 6' Liberty.
- 2-36" x 36" x 10' Bickett.
- 1-36" x 36" x 12' Woodward & P.
- 3-36" x 36" x 18' Cincinnati.
- 3-42" x 42" x 10' Gray.
- 1-72" x 56" x 36" Cincinnati.

GRINDERS

- 3-6" x 18" Landis.
- 12-10" x 36" Norton.
- 3-10" x 72" Norton.
- 3-12" x 26" Modern.
- 11-14" x 50" Norton.
- 1-16" x 72" Norton.
- 1-18"-30" x 96" Norton Gap.

PRESSES

- 2-No. 4 Walsh.
- 1-No. 32 Toledo Solid Back.
- 1-No. 34 Toledo Solid Back.
- 1-No. 74½ Bliss Geared.
- 1-No. 75½ Bliss Geared.
- 1-No. 93-A Toledo Double Crank.
- 1-No. 94-F Toledo Double Crank.
- 1-No. 69 Stoll Geared.
- 1-No. 87 Bliss Geared.

Our Guarantee: Your money back if you return a machine within thirty days, freight prepaid.

HILL, CLARKE & CO. of CHICAGO, 649 W. Washington Blvd., CHICAGO, ILL.

HMTB4-I-RTG

Surplus New and Good Used Machine Tools

Three—Brown & Sharpe No. 14 Plain Grinders.
 Two—Brown & Sharpe No. 11 Plain Grinders.
 Two—Landis 10x24, Self Contained, Plain Grinders.
 One—Heald No. 70 Internal, with Clutch Head.
 One—Badger No. 8 Disc Grinder with Motor.
 One—Badger No. 6 Grinder.
 One—Diamond No. 3 Grinder.
 One—Oakley No. 2 Universal Grinder.
 Two—Diamond 16x3 Grinders.
 One—Capitol Internal Grinder.

One—Warner & Swasey No. 6 Turret Lathe.
 One—Woodward & Powell Planer 36x36x10, 4 Hds.
 One—Standard No. 1 Hand Miller, with Spline Milling Attachment.
 One—Standard No. 1½ Hand Miller, with Power Feed.
 One—Standard No. 1½ Hand Miller.
 One—Worcester No. 2B Twist Drill Grinder.
 Ten—Cleveland ½—¾ Model B Automatics.
 One—Higley No. 12 Saw Machine.



VANDYCK CHURCHILL COMPANY

INCORPORATED STATE OF NEW YORK 1904

MACHINE TOOLS AND EQUIPMENT

52 VESEY STREET

NEW YORK

PHILADELPHIA, PA.
 NEW HAVEN, CONN.

Special Heavy Tools Available For Immediate Delivery

All In Good Operative Condition

1½" Acme Upsetter, Steel Bed.
No. 1 Plate Planer, Cleveland Punch & Shear, cap. Plates 1"x23".
Hydraulic Press, Niles 400 ton, 10' Vert. by 30' Hor., 2 Carriages.
36"x36"x10' Detrick & Harvey Openside Planer, 1 Rail & 1 Side Hd.
48"x48"x14' Gray Planer, Three Heads, Belt Drive.
36"x36"x10' Pond Planer, Three Heads, Belt Driven.
36"x36"x10' Gray Planer, Three Heads, Belt Driven.
Shaper and Milling Machine, Morton, Cap. 70" Horizontal Travel,
48" Vertical Travel, 60" Spindle Travel.
Roll Turning Lathe, No. 4 Lewis, length of Bed 25'; Length of
Face Plate to end 20'; Swing over Bed 55"; Swing over
Tool Rest 31"; Length of Tool Rest 11' 8".
Lathe, 30"x16' Schumacher & Boye, 4-Step Cone, Back Geared,
Quick Change Gears.
Lathe, 36"x24' Bradford; 5-Step Cone, Double Back Geared.
Lathe, 42" Pond, Triple Geared; Bed will take in 60" Centers but
Feed Screw is only 40' long; Raising Blocks for 66" swing
over Bed, 53" carriage, and Blocks for 84" swing over Bed,
72" carriage; Belt Drive.
Lathe, 44"x24' Pond, Belt Drive, Triple Geared.
Gear Planer, Gleason, cap. 10' Spur Gears, Motor Driven.
Boring Mill, Bullard 54" Maxi Mill, Motor Drive; cap. Swings 56"
between Housings and 45½" under Rail.
Boring Mills, King 52", Motor Drive, cap. 56" swing, 40" under Rail.
Boring Mill, King 42" Motor Drive, Swing 44"; 35" under Rail.
Boring Mill, Horizontal, No. 770 Niles, Vert. Travel 30"; Spindle
Travel 75", 5½" Bar; will bore hole 6' long with variations
less than .003".
Boring Mill, Horizontal, No. 352 Niles; Vert. Travel 24"; Hori-
zontal Spindle Travel 48"; 3⅞" Bar.
Grinders, Three Landis 16"x48" Crankshaft, 90% condition.

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D. M. Osborne Machinery Company

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Cleveland, Ohio

SPECIALS

THIS MONTH

All Tools Guaranteed and Tested

- 1 Cincinnati Horizontal Production Milling Machine, with adjustable head and tail stock, 4½ ft. table. Guaranteed like new.....\$650.00
- 1 Whitcomb Planer, 6 foot table, 24" wide, single head. Guaranteed good running condition\$625.00
- 1 Pratt & Whitney Hand Screw Machine; takes up to ½" stock.....\$125.00

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Good Lathes, Planers, etc.—All Kinds of Tools

Members St. Louis Chamber Of Commerce

National Machinery Mfg. Co., Inc.

3505 Page Ave., National Bldg., St. Louis, Mo.

TOOLS FOR Quick Service—Quality Work

Bolt cutter, 4" Landis single head.
Drill, super-speed, 13" Fostick single spindle.

Drill, radial, 4" Fostick plain.

Drill, sliding head, 36" Snyder, b. g., power feed.

Drill, 20"—3 spindle Barnes, all geared.

Gear shaper, 35" Fellows, spur.

Grinder, hole, No. 6 Bryant.

Grinder, univ., No. 1—10"x24" Brown & Sharpe.

Hammer, No. 12 Beaudry, pwr.

Lathe, pulley, 36" Streit.

Miller, universal, No. 3 Brown & Sharpe.

Planer, 36"x36"x16' Ohio, 2 hds.

Press, No. 3 Rockford, o. b. i., plain.

Punch and shear, No. 1-A New Doty.

Shear, square, No. 416—J—10'.

Slotter, geared, 26" Niles.

Turret lathe, 18" style "A" Libby.

Keen Competition

Demands Efficient Machine Tools

THE E. L. ESSLEY • MACHINERY • CO

551 W. Washington Blvd., Chicago.

78-80 W. Water St., Milwaukee

USED

BORING MILLS

24" Bullard vertical turret lathes,
New Era (3).
30" Bullard, 3-jaw chkl., mtr. dr. (2).
34" Rogers, grd. feed, motor drive.
42" Baush, 2 swivel hds., pl. tbl., m.d.
42" Bullard rap. prod., 2 swiv. hds.
W. F. & J. Barnes horiz. drilling &
boring (2).

DRILLS

20" Prentice, lever feed.
20" W. F. & J. Barnes, wheel and
lever, power feed (3).
21" Cincinnati, sliding hd., tapping,
back geared, power feed.
23" Rockford sliding hd., back grd.,
power feed, (3).
24" Avey sliding head, heavy sens.
24" Kern, b. g., pwr. fd., tapping.
Colburn No. D-5 heavy duty.
Natco No. 14 Multi-Driller, bored
for 22, equip. with ten 14" spdl.

RADIAL DRILLS

3' American, pl., gr. box, swg. table.

GANG DRILLS

4-spdl. 20" Barnes, w. & l., pwr. fd.
4-spindle Cincinnati 28"
Moline No. 6-D, 24" rl., 8 BV-14 hds.
Moline No. 7, 24" rail, 4 No. 28 hds.
Moline No. 11-D, 5' rl., 8 BV-14 hds.
Moline No. 16-D, 24" rl., 6 BV-20 hds.
Moline No. 17-D, 24" rl., 8 BV-14 hds.
Moline No. 7-D Cylinder Borer,
30" rail, 4 CWL-30 heads.

GEAR CUTTERS

No. 12 Barber-Colman hobber.
No. 5 B. & S. spur gear cut., 36" cap.
50"x12" Gould & Eberhardt, spur,
with rack cutting attachment.
No. 6 Fellows gear shaper.

GRINDERS

No. 1 Cincinnati pl. cutter grinder.
No. 1 Cincinnati univ. cutter grdr.
10"x72" Norton pl., good as new.
12"x48" Cincinnati pl. cylindrical.
12"x48" Cincinnati univ. cylindrical.
16"x48" Cincinnati pl. cylindrical.
No. 6 Bryant internal.

GRINDERS—Continued

No. 20 Heald rotary surface.
Pratt & Whitney vertical surface.
No. 4 Gardner disc (3).
84"x24" Diamond face, motor drive.
Type A, Production polishers, (2).

LATHES

9"x18" Porter-Cable.
16"x6" L. & S., 3-step, quick change,
practically new.
16"x8" Bradford, 5-step, c.r., taper.
16"x8" Von Wyck, 5-step.
18"x8" S. & B., 3-step, comp. rest.
18"x13" Lehmann, qk. ch., 3-step, c.r.
20"x8" L. & S., 5-step, quick ch., c.r.
24"x12" Reed, 4-step, compound rest.
28"x14" LeBlond, 3-step, comp. rest.

MILLING MACHINES

No. 1 Cincinnati plain, cone.
No. 1 Cincinnati plain, cone.
No. 2 Cincinnati plain, cone.
No. 3 Cincinnati plain, high power.
No. 4 Becker-Brainerd vertical.
No. 6 Becker-Brainerd vertical.
Putnam, Lincoln type (3).

PLANERS

24"x24"x 6' Cincinnati, 1 head.
33"x33"x 8' Cincinnati, 3 heads.
66"x66"x17' Harrisburg, 2 heads.

SCREW MCHS. & TURRET LATHES

1' Smith screw machine plain head.
12" Acme screw machine, friction
head.
No. 1 Warner & S. hollow hexagon,
3"x36" J. & L. flat turret, grd. hd.
21"x10" Gisholt, 3-jaw chuck.
No. 53 National-Acme automatic.

SHAPERS

14" Barker crank.
21" American b. g. crank.
28" American b. g. crank.

SAWS

O & C. cold saw.
Klemm metal band saw.
No. 5 Marvel hack saw.

MARSHALL & HUSGHART MACHINERY CO.

17 So. Jefferson St., Chicago, Ill.

REAL BARGAINS— *Write or Wire Us for Details*

Boring Mill, 3A universal horiz.
 Drill Presses, hi. spd. 1, 3 & 4 sp.
 Gear Cutter, 36" B. & S. Auto.
 Gear Shaper, No. 6 Fellows.
 Grinder Plain, 7½x72" B. & S.
 Grinder Plain, 12x36" Cincinnati.
 Grinder Plain, 10x48" B. & S.
 Grinder Plain, 6x15" Ott.
 Gr. Chucking, No. 18 Bryant inter.
 Grinder Internal, No. 75 Heald.
 Radial Drill, 3' American sensitive.
 Lathe, 1½x6' Willard, d. b. g.
 Lathe, 15x6' Champion, d. b. g.
 Lathe, 16x8' Greaves-K., s. b. g.
 Lathe, 17x6' Champion, d. b. g.
 Lathe, 18x8' LeBlond, s. b. g.
 Lathe, 18x8' Lodge & S., grd. hd.
 Lathe, 20x10' LeBlond, d. b. g.
 Lathe, 20x10' Greaves-K., d. b. g.
 Lathe, 24x12' S. & B., d. b. g.
 Lathe, 24x16' LeBlond extra hvy.
 Lathe, 30x12' Greaves-K., d. b. g.
 Lathe Turret, 20" Acme pwr. fd.
 Lathe Flat Turret, 2½x26" Acme.
 Lathe Flat Turret, 3½x36" Acme.

Relieving Machine, 9x7" P. & W.
 Miller Hand, U. S., Garvin, Fox.
 Miller Plain, No. 1 Cinti. bk. grd.
 Miller Plain, No. 1½ Cinti. bk. grd.
 Miller Plain, No. 2 Kempsmith, b. g.
 Miller Plain, No. 24 Oesterlein, b. g.
 Miller Plain, No. 0 Steptoe bk. grd.
 Miller Univ. No. 29 Oesterlein com.
 Planer, 22x22x6' one head.
 Planer, 30x30x10' Cinti., 2 heads.
 Planer, 36x36x18' Cinti., 4 hds.
 Planer, 36x36x10' Gray, 2 hds.
 Planer, 36x36x10' Am., 2 hds.
 Planer, 42x36x16' Cinti. 4 hds.
 Screw Mche. Hand, 1" Stenotype.
 Screw Mche. Hand, 3" P. & W.
 Screw Mche. Auto., 3" Cleveland.
 Screw Mche. Auto., 3" Cinti. 5 sp.
 Screw Mche. Auto., 3" Cleveland.
 Screw Mche. Auto., 2½" Cleveland.
 Screw Mche. Auto., 3" Gridley.
 Screw Mches. Auto. Nos. 52, 55,
 56, 4 spindle National Acme's.
 Screw Slotter, Brown & Sharpe.
 Tapper, Webster & Perks 5 spdlle.

CINCINNATI AUTOMATIC MACHINE CO., Cincinnati, Ohio

Are You Thinking—

Of installing a Radial Drill? If so, the following machines are **REAL** bargains:

- 1—2½' Standard type, heavy duty, **MUELLER** radial drill, gear drive.
- 1—3' Standard type, heavy duty, **MUELLER** radial drill, gear drive.
- 1—4' Standard type, heavy duty, **MUELLER** radial drill, gear drive.

Prices will arouse interest

Write and Satisfy yourself

The Mueller Machine Tool Company

Radial Drills and Lathes

ESTABLISHED 1902

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LARGEST STOCK IN THE EAST

New and Used High Grade Modern MACHINE TOOLS

Guaranteed At Prices to Net You a Worth While Saving

BORING MILLS

- 4—Bullard 24" New Era type, vert.
- 2—Niles-Bement-Pond 52", vert.
- 1—Landis No. 35 horiz., floor type.

DRILLS—Upright and Radial

- 12—New 24" Sibley upright.
- 1—Minster D-3, heavy duty.
- 1—3 $\frac{1}{2}$ " Mueller Radial, S. P. D.
- 1—Foote-Burt 4 $\frac{1}{2}$ 4-spindle, rail.
- 2—New Turner No. 3, vert. turret.
- 1—N.-B.-P. 9 $\frac{1}{2}$ " Ridgeway, motor drive, plain radial.
- 1—Western 6", plain radial.
- 1—Baush 6".

DRILLS—Multiple Spdl., Rect. Head

- 1—Nasco No. 14, q. c. g.
- 1—Nasco No. 30, 12 spindle.
- 2—New Baush No. 3, 21 spindle.
- 1—New Baush No. 4, 56 spindle.
- 1—Fox, 6 spindle.

PLANERS

- 7—Putnam 26x26x8', 2 heads.
- 1—Woodward & P. 36x36x12', 4 hds.
- 1—Putnam 48"x48"x12', 2 hds. m.d.
- 2—Cleveland 30x30x8 and 36x36x8 openside, NEW.

MILLERS—Plain, Mfg., Univ. & Vert.

- 2—Milwaukee No. 1 $\frac{1}{2}$ plain.
- 1—Brown & Sharpe No. 2 plain.
- 1—Milwaukee No. 3-B universal.
- 2—Briggs type B.
- 2—Taylor & Fenn vertical.
- 1—Becker No. 4B and No. 5C vert.
- 1—Becker "C." vertical.
- 1—Becker No. 2H, vertical.
- 1—Newton No. 1 duplex.

GRINDERS

- 1—Blanchard No. 10, motor driven.
- 1—Springfield-B., 12x12x48 vert.
- 1—Brown & Sharpe No. 14 plain.
- 16—Cincinnati No. 2, 12x36.
- 4—Norton 6x32 & 2—Norton 10x36.
- 1—Fitchburg 12x54.
- 1—Norton 16x36.
- 4—Heald Nos. 60, 65 & 70.
- 2—Heald rot. sur. Nos. 210, 255.

SHAPERS and SLOTTERS

- 3—New 16" Davis, s. p. d.
- 1—American, 28".
- 1—Newton 10" slotter.
- 1—Pratt & Whitney 10" slotter.

GEAR CUTTERS

- 2—Barber-Colman No. 2.
- 4—Hercules 8".
- 2—Brown & Sharpe 3x26.
- 1—Brown & Sharpe No. 13.
- 1—Gould & Eberhardt 60", spur.
- 1—Fellows Nos. 61, 6 & 612.
- 1—Gleason 6", 11" & 18", bevel.

TURRET & SCREW MCHS.

- 1—Foster No. 1-B turret.
- 1—Warner & Swasey No. 3-A.
- 3—Foster No. 2-B turret.
- 1—Warner & Swasey No. 4, p. f.
- 1—Warner & Swasey No. 2, p. f.
- 1—New Foster No. 10 turret.
- 4—Greenlee, 2 $\frac{1}{2}$ x26" turret.
- 4—J. & L. 2x24.
- 1—J. & L. 2 spindle turret.
- 1—J. & L. 3x36", flat.
- 1—Acme 1 $\frac{1}{2}$ " turret.
- 2—P. & W. 1x14 screw.

AUTOMATIC SCREW MCHS.

- 8—New Britain No. 24.
- 2—Cleveland 2 $\frac{1}{2}$ " Model A.
- 15—Cleveland $\frac{1}{2}$ " to $\frac{3}{4}$ " capacity.
- 1—Cleveland $\frac{1}{2}$ " to $\frac{3}{4}$ " capacity.
- 1—Cleveland 7 $\frac{1}{2}$ ".
- 7—Gridley 4-spindle, cap. 1 $\frac{1}{2}$ ".

LATHES

New Star Lathes, all sizes with all attachments.

- 12—New South Bend 16x8 and 18x8 gap; 21x11.
- 10—New South Bend 15x5.
- 1—Walcott 26x14, 6", q. c. g.
- 1—Johnson 30x12, motor dr.
- 1—Bridgeford 36"x42" (raised to swing 60").

PRESSES

- 2—Toledo No. 53, flywheel.
- 4—Toledo No. 55 & No. 55 $\frac{1}{2}$, grd.

MISCELLANEOUS

- 1—Acme bolt cutter, 3" cap., motor.
- 1—National bolt cutter, 2-and-1, 1".
- 1—Landis 1 $\frac{1}{2}$ " bolt cutter, dbl. hd.
- 1—Landis 1 $\frac{1}{2}$ " 3-sp. mtr. dr., bolt cut.
- 1—Erie 1100 lb. hammer.
- 1—Quickwork No. 4-B rot. shear.
- 1—New Quickwork No. 6 rot. shear.
- 1—Bliss No. 109 Slitter.

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*The Above And Hundreds Of Other
Machine Tools In Stock*

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Priced at a Fraction of Original Cost

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14, 16, 20 & 24" G. & E. and Rockf'd.
24" Norton draw-cut shaper.

PRESSES

Nos. 7-B, 74 and 75 Trimming.
D-201, DGG-55, DGG 56 and E-57
Ferracutte.
No. "D" L. & A. heavy duty press.
No. 6 American, open back inc.

MILLERS

No. 3-H LeBlond, plain.
No. 15 Garvin, plain.
No. 21 Garvin, plain.
No. 2 Pratt & Whitney, vertical.
No. 3 Brown & Sharpe, vertical.
No. 5-B Becker, vertical.
No. 5-C Becker, vertical, s. p. d.
No. 6 Becker, vertical.
No. 21 Hende Mfg.
No. 7 Becker Mfg.

LATHES

11" x 5' Myers.
12" x 5' Vernon, q. c. g., t. a.
16" x 5' Putnam, t. a.
18" x 6' Springfield, t. a.
19" x 10' LeBlond, crankshaft.
20" x 8' American, q. c. g.
20" x 10' Bradford, b. g.
20" x 8' Cincinnati, b. g.
21" x 12' LeBlond, q. c. g.
24" x 12' American, q. c. g.
30" x 16' LeBlond, q. c. g.
48" x 40' Pond, h. d.
60" x 40' Fifield, h. d.
96" x 40' Fifield, h. d.

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400 lb. Pratt & Whitney.
600 lb. Union.
800 lb. Union.
1000 lb. Union.
2000 lb. Bliss.
2500 lb. Bliss and Chambersburg.
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HAMMERS (Steam)

300 lb. Post.
600 lb. Massillon, s. f.
800 lb. Bement.
1000 lb. McDougal & Potter, s. f.
2000 lb. Chambersburg, d. f.
2500 lb. Chambersburg, d. f.
4000 and 6000 lb. Bement.

PUNCHES and SHEARS

P is I-beam shear, cap. 15".
6"x6"x11" Cleveland angle shear.
3"x3" cap. Chicago alligator shear.
5" cap. Carlin alligator shear.
Cleveland sgl. end, 1" cap., 20" thr.
Cleveland sgl. end, 2"x1" cap., 24" thr.
Cleveland sgl. end, 1 1/2" cap., 27" thr.
Cleveland sgl. end, 1 1/2" cap., 36" thr.
Cleveland sgl. end, 1 1/2" cap., 45" thr.
No.8 Whiting sgl. e., 1 1/2" cap., 42" thr.
(Above Motor Drive with Architectural Jaws.)

GRINDERS

16" x 68" Landis crankshaft grinder.
16" x 36" Landis universal grinder.
26" x 96" Landis plain grinder.

AIR COMPRESSORS

250 cu. ft. Union horiz. belt drive.
275 cu. ft. Gardner, portable.
600 cu. ft. Ingersoll, steam.
1750 cu. ft. Laidlaw Dunn-G., belt.
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From 5 to 250 h. p., 3 phase, 60 cycle,
220-440 volt, slip ring & induction.
250 k. w. Gen. Elect. a. c. generator.
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MISCELLANEOUS

Allen yoke riveters, various sizes.
6" bending roll, cap. $\frac{1}{2}$ ".
1", 2" & 2 $\frac{1}{2}$ " National bolt cutters.
8" and 12" pipe machines.
Standard cooper and notcher.
Cleveland horiz. rail straightener.
3 $\frac{1}{2}$ " Morris plain radial drill.
24" Steine turrett lathe, 6" hole.
80 lb. Bradley helve hammer.
500 lb. Bradley trip hammer.
500 lb. Beaudry power hammers.
4 spindle Acme nut tapper.
8-spdl. Bausch multi drill, cap. 1".
2 $\frac{1}{2}$ " Gridley s. s. automatic.
18" x 18" x 45" planer, 1 head, s. p. d.
4" and 6" cutting-off machines.
6" Lennox rotary shear, cap. $\frac{1}{2}$ " plate.
6" Lovelink flanging mch., class A.
14" Ajax forging machine.

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2 Spindle (12" overhang) ALLEN H. S. B. B.
Drill Press.

4 Spindle (12" overhang) ALLEN H. S. B. B.
Drill Press.

12"x5' VERNON Q. C. G. Lathe with taper,
like new.

20"x10' MONARCH Q. C. G. Lathe.

3½"x60" LO-SWING Lathe.

Type B BRIGGS Milling Machine—34" feed.

Type B BRIGGS Milling Machine—42" feed.

No. 2-B MILWAUKEE Universal Miller,
complete equipment.

72"x56"x14' GRAY Planer, 2 heads.

Stocker-Rumely-Wachs Co.
117 N. Jefferson St., Chicago, Ill.

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The Co-Operative Machinery Co.

621 Engineers Bldg., Cleveland, O.

Drill Press, used 10" Winterhoff bench, ½" capacity	\$ 35.
Drill Press, 2 spdl. ball bearing Allen, good condition	225.
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Gear Cutter, used No. 13 B. & S. Gear Cutter, good cond....	325.
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Grinder, used Capital Internal Grinder	250.
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Lathe, 14"x6' used Porter Engine Lathe	150.
Lathe, used Woods Model C Tilted Turret, plain head, power feed to turret, with 10" Barker wrenchless chuck	375.
Lathe, used 13"x8' Willard, double back gear, fine cond....	225.
Lathe, new 9"x24" Sundstrand Mfg., gear drive	585.
Miller, used No. 2 LeBlond heavy duty Plain Miller	590.
Miller, new No. 1½ Rockford Plain Miller	950.
Millers, used U. S. Hand Millers, good condition.....each	120.
Planer, used 30"x30"x6' Gray Planer, 1 head on rail	550.
Screw Machine, used No. 1 Garvin Plain, practically new....	195.

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GUARANTEED

Machine Tools

Tested before shipment, and supplied with standard equipment as furnished by manufacturer when new.

DRILLING MACHINES

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|---|--|
| 1-120" Baush Extra Heavy Radial, tapping. | 2-No. 37 Natco 20 spindles. |
| 1-87" Warren semi-universal. | 1-No. 32 Natco 42 spindles. |
| 1-72" Bickford, gear box. | 1-No. 30 Natco 48 spindles. |
| 1-72" American, gear box. | 2-No. 14 Natco 22 spindles. |
| 1-72" Reed Prentice, cone. | 2-No. 13-D Moline 8 spindles. |
| 1-60" American universal. | 2-No. 2-D Moline 4 spindles. |
| 1-60" Bickford, gear box. | 1-No. 4 Baush 40 spindles. |
| 1-48" Bickford, gear box. | 1-No. 3 Baush 40 spindles. |
| 1-48" Bement, cone. | 1-No. 3 Baush 24 spindles. |
| 1-36" Gang, cone. | 1-Baush 8 spindles. |
| 1-36" American sensitive. | 3-6 spindle Allen high speed sensitive drills. |
| 1-30" Fosdick, gear box. | 3-4 spindle Allen h. s. |
| 1-30" Mueller, gear box. | 3-3 spindle Allen h. s. |
| 1-24" Mueller, gear box. | 5-2 spindle Allen h. s. |
| 1-40" Bement upright drill. | 8-1 spindle Allen h. s. |
| 2-26" Rockford upright tapping. | 1-1 spindle Sipp h. s. |
| 1-No. 315 Baker. | 1-1 spindle Henry-Wright. |
| 1-No. 310 Baker, gear box. | 1-2 spindle Henry-Wright. |
| 1-24" Cincinnati, tapping. | 2-4 spindle Henry-Wright. |
| 1-24" Aurora, sliding head. | 1-2 spindle Francis Reed. |
| 1-24" Silver, tapping. | 2-23 Rockford 4 spindle. |
| 1-24" Libby, sliding head. | 2-28" Barnes 4 Spindle. |
| 6-20" Buffalo upright. | 1-6 spindle Acme horizontal. |
| 2-20" Barnes, all geared. | 3-14" Washburn sensitive, High Speed sensitive drills, 1, 2, 4 & 6 spindles 7", 8", 10", 15" & 30" overhang. |
| 6-10" Buffalo, bench. | |
| 3-No. 41 Natco Straight Line 12-spindle drills. | |

The above is a list of Drilling Machines in our own stock **NOW** at our New York, Albany and Buffalo Warehouses. Of course we have Automatics, Boring Mills, Grinders, Hammers, Keyseaters, Lathes, Milling Machines, Presses, Punches, Planers, Rolls, Shapers, Slotters, Upsetters, etc.

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Simmons Machine Tool Corp'n
1212 Troy Road, Albany, N. Y.

J. J. McCABE SINGER BUILDING NEW YORK CITY

McCABE "2-in-1" LATHES

Used but rebuilt
in our own shop

- 32-54" swing, 14' bed,
- 26-48" swing, 16' bed, large pl. face plate. Price f.o.b. New England.
- 26-48" swing, 22' bed, large pl. face plate. Price f. o. b. Southwest.

USED "2-in-1" LATHES

McCabe-Former Pattern

- 24-40" swing, 10' bed.
- 26-44" swing, 10' bed.

NEW "2-in-1" LATHES

12-ft. to 32-ft. Beds

BIG LATHE

- 66" swing, 42' bed, Putnam triple geared, arranged for motor drive.

A fine tool for the Big Shop
requiring equipment of
the better kind

OTHER LATHES

- 14" sw., 8' bed, Sidney, q. c.
- 15" sw., 6' bed, Sebastian.
- 18" sw., 10' bed, McCabe, q. c.
- 18" sw., 12' bed, Schumacher & B.
- 21" sw., 12' bed, McCabe, q. c.
- 24" sw., 14' bed, Reed-Prentice.
- 26" sw., 14' bed, Niles-Bement-P.
- 32" sw., 20' bed, McCabe, q. c.
- 42" sw., 16' bed, McCabe, geared head, quick change.
- 50" sw., 30' bed, Pond.
- 50" swing, 24' bed, Bement-Miles, triple geared.
- 60" sw., 28' bed, Wickes.
- 84" sw., 46' bed, Putnam, motor-dr.
- 110" swing, 42' bed, Bement-Miles, 5" blocks.

LARGE BORING MILL

- 96" sw., Niles Vertical Boring and Turning Mill, 2 swivel heads, table 68" diam, 54" height, under tool. Double box cored housings, cone-drive. Rated A1.

PLANERS

- 84"x60"x30' Pond, 4 heads.
- 54"x54"x12' Pond, 4 heads.
- 48"x48"x15' Pond, 2 heads.
- 38"x36"x12' Gray, 2 heads.
- 26"x26"x 6' Niles, 1 head.

A FEW OF THE OTHER BARGAINS

- 16" stroke, Smith & Mills Shaper.
- 18" stroke, Ohio Shaper.
- 12" Gould & Eberhardt Gr. Cutter.
- No. 6 Bliss Press.
- 28" Espen-Lucas Cold Saw.
- "1M" Q. & C Cold Cut-Off Saw.
- 25 lb. Dupont Hammer.
- 50 lb. Little Giant Power Hammer.
- 50" Bullard Boring Mill.
- 42" Baush, motor drive.
- No. 3 Baker Keyseater.
- 24" arm Radial Drill, speed box.
- 4" arm Radial Drill, speed box.
- 24" stroke, Bement-Miles Slotter.
- 8x30 Modern Cylinder Grinder.
- 21" Turret Lathe, Gisholt Gap.
- 3x36" Jones & L. Turret Lathe.
- Horizontal & Vert. Newton Miller.
- 48" bar, Bement-Miles Horizontal Boring Mill.
- 18" throat Long & A. Double End Punch and Shear.
- 42" throat Perkins Punch.
- 50" throat McCabe Punch & Shear.
- 60" throat H. & J. Horiz. Punch.
- 10' McCabe Rolls, drop end.
- 14" Acme Bolt Cutter.
- 3-Hack Saws.

MANY OTHER LARGE TOOLS—

of the kind rarely found on the Used Machinery Market.

WRITE FOR THE NEW COMPLETE LIST

J. J. McCabe Lathe & Machinery Corp'n
SINGER BUILDING - - NEW YORK CITY

Attractively Priced Machinery

From a Modern Plant

BORING MACHINES

10'-22' Betts Vert., 2 swiv. hds., belt.
 10' Niles Vert., 2 swivel hds., mtr. dr.
 8' Niles Vert., 2 swivel heads, belt.
 84" Bickford Vert., 2 swiv. hds., belt.
 72" Gisholt Vert., 2 swiv. hds., m. d.
 42"x24" Bullard New Era, Vertical.
 36" King Vertical Swivel Turret,
 swings 44½".
 No. 5 Barret Cyl., 7" bar.
 No. 31 & No. 32 Lucas, 3" & 3½"
 bar, s. p. d.
 3-A Universal Horizontal, bar, belt.

DRILLS

6' American Plain & Univ. Radials.
 2½', 3', 4' & 5' Radials, various makes.
 Baush Mult. 28" round head, 14 spdl.,
 3 Morse, motor drive.
 Western 25" round head, 6 spindle,
 3 Morse, belt.
 Nos. 310 & 315 Baker H. D. Drills.
 26" Aurora, sliding head.
 20" Champion drill.
 Sipp and Leland-Gifford Sensitive.
 Model "F" Turner 4 Spindle Turret
 Drill, No. 4 taper, belt drive.
 Quint Turret Drill, 6 spindle, No. 4
 Morse, belt drive.

GRINDERS

12"x36" Univ., 10"x30" Plain Landis.
 Nos. 2 & 3 B. & S. Surface Grinders.
 No. 1 LeBlond Univ. cutter & tool.
 Geometric Tool Co. Chaser Grinder.
 Gisholt Forged Tool Grinder.

LATHES, TURRET & AUTOMATICS

Fay Automatics, latest type.
 No. 3-A W. & S. Hollow Hex. Tur-
 ret, chuck equip.
 No. 2-A W. & S. Universal Turret,
 bar and chuck, equip.
 No. 2 Old Style Hollow Hex. Turret.
 No. 4 W. & S. Universal Turret,
 chucking equipment.
 30 Other W. & S. and B. & O.
 Turret and Fox Lathes.

LATHES, ENGINE

84"x40' Putnam, grd. hd., motor dr.
 65"x35' Pond, geared hd., motor dr.
 50"x15' New Haven, blocked to swing
 60", cone drive.
 42"x24' H. S. & G., grd. hd., mtr. dr.
 36"x12' New Haven, cone drive, spl.
 back geared.
 32"x18' American, geared head, ar-
 ranged for motor drive.
 27"x10½' American Engine Lathe,
 cone drive, quick change gear, belt.
 50 Other Engine Lathes, 14"x6' to
 24"x16'.

MILLING MACHINES

No. 10 N. B. P. Vert., motor drive.
 Nos. 4 & 5 Cincinnati Plain, cone dr.
 No. 2-B Kearney & Trecker H. P.
 Plain, s. p. d., q. c. g.
 No. 3 Cin'ti Vert. s. p. d. latest type.
 45 Other Vertical Plain and Universal
 Millers, standard makes and sizes.

SHAPERS

24" G. & E. cone drive, b. g., vise
 and countershaft.
 24" American, h. d., b. g., vise and
 countershaft.
 12 Other Shapers, standard makes
 and sizes.

MISCELLANEOUS

5½" Cleveland Automatic, Model A.
 Auto. Trans. Elevating Truck, Edison
 Stor. Batteries.
 Lincoln Electric Port. Arc Welder,
 40 amp., 220 volt.
 No. 12 Lees-Bradner Thread Milling
 Machine.
 No. 3 Greenard Arbor Press on iron
 base.
 International Time Clocks, with card
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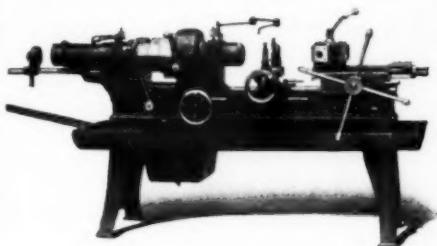
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- 1—2" Cleveland automatic Screw Machine, Class B, latest type, h. s. drilling attachment, Serial 29694, 95%.
- 1—5A Potter & Johnston Automatic, serial 20679, 90%.
- 5— 9" x 20" Porter & Cable Lathes.
- 2—21" Gisholt Turret Lathes.
- 3—Valve Grinders, Misch.
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- 3—No. 1 Kent-Owens Hand Millers.
- 1—No. 2 J. N. La Pointe Single Broaching Machines.
- 2—No. 3 Kempsmith Plain Millers.
- 2—20" Barnes Geared Drills, p. f., and Pumps.
- 2—24" Hoefer Sliding Head Drills, b. g., p. f., square tables.
- 4—16" Henry & Wright class K, double spindle B. B. Drills.
- 1—No. 17D Moline 4-spindle Hole Hog Drill, 20" swing.
- 2—4" Hammond B. B. Radial Drills with tappers.
- 1—No. 315 Baker High Duty Drilling Machine.
- 1—No. 2X Garvin Automatic Tapper.
- 1—No. 2 International Vertical Tapper.
- 1—No. 1 W. & S. Screw Machine, a. c., b. feed, p. f. turret.
- 2—1" Millholland Screw Machines, a. c., b. feed, h. f. turret.
- 1—2" Garvin Screw Machine, a. c., b. feed, p. f. turret.
- 1—24" x 8" Bridgeford Chucking Lathe, with hex. turret.
- 1—16" x 6" Fulton Lathe, compound rest.
- 1—20" x 8" Whitcomb-Blaisdell Lathe, q. c. g., compound rest.
- 1—15" x 6" Sidney Engine Lathe, p. f., turret on shears.
- 1—No. 14 Brown & Sharpe Plain Grinder.
- 1—No. 2 Bath Universal Grinder.
- 1—No. 103 Rivett Internal Grinder.

Electric Japan Oven 12' x 20' x 8' 6", with conveyor 70' centers; Hanna Yoke Riveter; Vises; Belting; and many other machines not mentioned.

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Holmes Automobile Company

Liquidation Department

Canton, Ohio

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- No. 3-B Brown & Sharpe Plain Miller, single pulley.
- No. 3 Cincinnati High Power Plain Miller, single pulley.
- No. 2-B Brown & Sharpe Plain Miller, single pulley.
- No. 1-B Milwaukee (Kearney & Trecker) Plain Miller single pulley.
- No. 6 Whitney Hand Miller.
- No. 5-C Becker Vertical Miller cone pulley drive.
- No. 2 Cincinnati High Power Vertical Miller, single pulley.
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- 27"x18" R. K. LeBlond, heavy duty quick change lathe.
- 25"x12" R. K. LeBlond, heavy duty quick change lathe.
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- 22"x10" Hamilton semi-quick change gear lathe.
- 20"x10" Bradford standard change gear lathe.
- 20"x 8" Hendey quick change geared head lathe single pulley drive.
- 18"x10" Greaves & Klusman, quick change gear lathe.
- 16"x 8" Hendey quick change geared head lathe, single pulley drive.
- 16"x10" R. K. LeBlond quick change gear lathe.
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- 24" Gisholt Turret Lathe type with 64" hole through spindle.
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- 4" Western Plain Radial Drill single pulley gear box drive.
- 3" Western Plain Radial Drill single pulley gear box drive.
- 28" Cincinnati-Bickford Upright Drill single pulley, gear box and tap. att.
- 26" Aurora Upright Drill press with tapping attachments.
- 24" Cincinnati Bickford Upright Drill Press.
- 23" Rockford Upright Drill Press with tapping attachments.
- 20" W. J. & John Barnes four spindle gang drill with auto. approach and return feed.
- 2-spindle Allen High Speed Ball Bearing Sensitive drill No. 2 Morse Taper.
- 2-spindle Henry & Wright High Speed Ball Bearing Sensitive Drill Press.
- 21" Potter & Johnston, Crank Shaper.
- 16" American Tool Works Crank Shaper with rotary table.
- 30x30"x8" G. A. Gray Planer with one head on rail.
- 42x42"x10" American Tool Works Planer with one head on rail.
- No. 21 Lucas Horizontal Boring Mill with 24" bar.
- 30" Colburn Vertical Boring Mill with turret head on rail.
- 8" J. M. Robinson Hand Power Sheet Metal Brake.
- 10" Set of Bending Rolls with drop end housings capacity 1/2" and lighter.
- No. 636 Niagara Power Gap Square Shear.
- 2 1/2" National Single Spindle Bolt Cutter.
- 1" National Single Spindle Bolt Cutter.
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- No. 6 Long & Allstatter Dbl. End Punch and Shear cap. 1/4" through 1/2" belt dr.
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20"x10" Prentice, taper.
20"x10" Hamilton, rapid production.
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 Planer, 72"x72"x24' Detrick & Harvey, 4 heads, motor drive, rapid traverse, latest type.
 Planer, 60"x60"x14' Gray, 4 heads, belted motor drive, late type.
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Drill Racks

Peerless Machine Co., Racine, Wis.

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Drilling Machine Heads, Multiple
National Automatic Tool Co., Richmond, Ind.
United States Drill Head Co., Cincinnati

Drilling Machines, Automatic Sensitive
Kingsbury Mfg. Co., Keene, N. H.

Drilling Machines, Bench
Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Conneaut, Ohio
Kingsbury Mfg. Co., Keene, N. H.
Reed Co., Francis, Worcester, Mass.
Rockford Drilling Machine Co., Rockford, Ill.
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Horizontal
Kingsbury Mfg. Co., Keene, N. H.
Morris Machine Tool Co., Cincinnati, O.
Rockford Drilling Machine Co., Rockford, Ill.

Drilling Machines, Multiple Spindle
Avey Drilling Machine Co., Cincinnati
Kingsbury Mfg. Co., Keene, N. H.
National Automatic Tool Co., Richmond, Ind.
Reed Co., Francis, Worcester, Mass.
Rockford Drilling Machine Co., Rockford, Ill.
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Portable Electric
Independent Pneumatic Tool Co., 600 W.
Jackson Blvd., Chicago
Stow Flexible Shaft Co., Philadelphia, Pa.
Strand Co., N. A., 6001 N. Lincoln St., Chicago
Wisconsin Electric Co., Racine, Wis.

Drilling Machines, Post
Mueller Machine Tool Co., Cincinnati

Drilling Machines, Radial
Morris Machine Tool Co., Cincinnati, O.
Mueller Machine Tool Co., Cincinnati
Taylor & Fenn Co., Hartford, Conn.

Drilling Machines, Sensitive
Avey Drilling Machine Co., Cincinnati
Burke Machine Tool Co., Conneaut, Ohio
Kingsbury Mfg. Co., Keene, N. H.
Leland-Gifford Co., Worcester, Mass.
Reed Co., Francis, Worcester, Mass.
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.
Wisconsin Electric Co., Racine, Wis.

Drilling Machines, Vertical
Avey Drilling Machine Co., Cincinnati
Kingsbury Mfg. Co., Keene, N. H.
Leland-Gifford Co., Worcester, Mass.
Rockford Drilling Machine Co., Rockford, Ill.
Sigourney Tool Co., Hartford, Conn.
Taylor & Fenn Co., Hartford, Conn.

Drills, Twist
Cleveland Twist Drill Co., Cleveland, O.

Drilling and Tapping Attachments
Reed Co., Francis, Worcester, Mass.

Dust Handling Equipment
Knickerbocker Co., Jackson, Mich.

Emery Wheel Dressers and Cutters
Diamond-Stephan Mfg. Co., Urbana, O.
Precision Truing Machine & Tool Co., Cincinnati, O.
Taylor & Fenn Co., Hartford, Conn.
Western Tool & Mfg. Co., Springfield, O.

Feeders, Oil and Soda Water
New Britain Machine Co., New Britain, Conn.

Filing Room Equipment
Wardwell Mfg. Co., Cleveland, O.

Flexible Shafts
Strand Co., N. A., 6001 N. Lincoln St., Chicago

Forgings, Hollow Bored
American Hollow Boring Co., Erie, Pa.

Furniture, Machine Shop
New Britain Machine Co., New Britain, Conn.
Western Tool & Mfg. Co., Springfield, O.

Gauges, Piston and Piston Ring
Federal Products Corp'n, Providence, R. I.

Gauges, Thread
Federal Products Corp'n, Providence, R. I.

Gears
Boston Gear Works Sales Company, Norfolk
Dorham, Mass.

Grinding Machines, Belt
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Peerless Surfacing Machine Co., Troy, N. Y.

Grinding Machines, Bench
Bodine Electric Co., 2256 W. Ohio St., Chicago
Gallmeyer & Livingston Co., Grand Rapids,
Mich.

Grinding Machines, Cutter, Reamer and Tool
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Jarecki Mch. & T. Co., Grand Rapids, Mich.
LeBlond Mch. Tool Co., W. K., Cincinnati, O.
Thompson Grinder Co., Springfield, Ohio
Wilmarth & Morman Co., Grand Rapids, Mich.

Grinding Machines, Cylinder
Whitney & Son, Baxter D., Winchendon, Mass.

Grinding Machines, Cylindrical
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Thompson Grinder Co., Springfield, Ohio

Grinding Machines, Die
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Jarecki Mch. & T. Co., Grand Rapids, Mich.
Thompson Grinder Co., Springfield, Ohio
Wilmarth & Morman Co., Grand Rapids, Mich.

Grinding Machines, Disc
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Porter Cable Machine Co., Syracuse, N. Y.

Grinding Machines, Drill
Gallmeyer & Livingston Co., Grand Rapids,
Mich.
Wilmarth & Morman Co., Grand Rapids, Mich.

Grinding Machines, Face
Taylor & Fenn Co., Hartford, Conn.

Grinding Machines, Internal
Taylor & Fenn Co., Hartford, Conn.
Thompson Grinder Co., Springfield, Ohio
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Wilmarth & Morman Co., Grand Rapids, Mich.

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 Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago.
 Porter-Cable Machine Co., Syracuse, N. Y.
 Service Tool, Die & Mfg. Co., 2256 Walnut Street, Chicago.
 Stow Flexible Shaft Co., Philadelphia, Pa.
 Strand Co., N. A., 5601 N. Lincoln St., Chicago.
 Wisconsin Electric Co., Racine, Wis.

Grinding Machines, Snagging
 Gallmeyer & Livingston Co., Grand Rapids, Mich.
 Jarecki Mch. & T. Co., Grand Rapids, Mich.

Grinding Machines, Surface
 Gallmeyer & Livingston Co., Grand Rapids, Mich.
 Thompson Grinder Co., Springfield, Ohio.
 Wilmarth & Morman Co., Grand Rapids, Mich.

Grinding Machines, Tap
 Gallmeyer & Livingston Co., Grand Rapids, Mich.

Grinding Machines, Tool
 Taylor & Fenn Co., Hartford, Conn.

Grinding Machines, Universal
 Gallmeyer & Livingston Co., Grand Rapids, Mich.
 Thompson Grinder Co., Springfield, Ohio.
 Wilmarth & Morman Co., Grand Rapids, Mich.

Hack Saw Blades
 Peerless Machine Co., Racine, Wis.

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 Armstrong-Biss Mfg. Co., 341 N. Francisco Ave., Chicago.
 Peerless Machine Co., Racine, Wis.
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 Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago.

Hammers, Power
 Quickwork Co., St. Marys, Ohio

Hammers, Riveting
 Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago.
 Quickwork Co., St. Marys, Ohio

Hardness Testers
 Wilson-Maculen Co., St. Marys St. & Concord Ave., New York

Hoists
 Ford Chain Block Co., Philadelphia, Pa.
 Thomas Elevator Co., 31 S. Hoyne Ave., Chicago

Hoists, Portable
 Canton Foundry & Machine Co., Canton, Ohio

Keys, Machine
 Leard Co., Wm., New Brighton, Pa.

Keyseating Machines
 Burr & Son, John T. Brooklyn, N. Y.
 Chattanooga Mch. Co., Chattanooga, Tenn.
 Davis Keyseater Co., Rochester, N. Y.
 National Machine Tool Co., Cincinnati
 Whitney Mfg. Co., Hartford, Conn.

Lathes, Bench
 Hardinge Brothers, Inc., 1770 Berceau Ave., Chicago.
 Monarch Machine Tool Co., Sidney, O.

Lathes, Engine
 Roy & Emmes Mch. Tool Co., Cincinnati, O.

Carroll Mch. Tool Co., A. V., Cincinnati, O.
 Hardinge Brothers, Inc., 1770 Berceau Ave., Chicago

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 Steptoe Co., John, Cincinnati, O.

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 Carroll Mch. Tool Co., A. V., Cincinnati, O.

Lathes, Short Bed
 Artisan Manufacturing Co., Cincinnati, O.
 Monarch Machine Tool Co., Sidney, O.
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 Western Tool & Mfg. Co., Springfield, O.

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 Nicholson & Co., W. H., Wilkes-Barre, Pa.

Metal Cutting Machines, Sheet
 Quickwork Co., St. Marys, Ohio

Milling Attachments
 Burke Machine Tool Co., Conneaut, Ohio.
 LeBlond Mch. Tool Co., R. K., Cincinnati, O.
 Porter-Cable Machine Co., Syracuse, N. Y.
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Milling Machines, Universal
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 Burke Machine Tool Co., Conneaut, Ohio.
 LeBlond Mch. Tool Co., R. K., Cincinnati, O.
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Mills, Adjustable Hollow
 Genesee Mfg. Co., Rochester, N. Y.

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Oil Cups

Gita Bros. Mfg. Co., 1940 S. Kilbourn Ave., Chicago
Tucker, W. C. & F. C., Hartford, Conn.

Oil Hole Covers

Tucker, W. C. & F. C., Hartford, Conn.

Pattern Shop Machinery

Towsley Mfg. Co., John T., Cincinnati

Pins, Leader And Dowel

Danly Machine Specialties, Inc., 4913 Lincoln Ave., Chicago

Pipe Bending Machines

Fedrick Tool & Machine Co., Philadelphia

Pipe Cutting and Threading Machines

Burnall & Keeler Mch. Wks., Edwardsville, Ill.

Planers, Openside

Cleveland Planer Co., Cleveland, O.

Planers, Valve Seat, Portable

Fedrick Tool & Machine Co., Philadelphia

Polishing and Buffing Machines

Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago
New Britain Machine Co., New Britain, Conn.
Wilmarth & Morman Co., Grand Rapids, Wisconsin Electric Co., Racine, Wis. [Mich.]

Presses, Arbor

Atlas Press Co., Kalamazoo, Mich.
Lourie Mfg. Co., Springfield, Ill.
Nicholson & Co., W. H., Wilkes-Barre, Pa.
Sheldon Machine Co., 2251 Cottage Grove Ave., Chicago

Presses, Broaching

American Broach & Mch. Co., Ann Arbor, Mich.
Lourie Mfg. Co., Springfield, Ill.

Presses, Foot

Rockford Iron Works, Rockford, Ill.
Taylor & Fenn Co., Hartford, Conn.

Presses, Power

Hendley & Whittemore Co., Beloit, Wis.
Leshbough-Jordan T. & M. Co., Elkhart, Ind.
Lourie Mfg. Co., Springfield, Ill.
Rockford Iron Works, Rockford, Ill.

Presses, Punch

LaSalle Machine Works, 3013 S. LaSalle St., Chicago
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Lourie Mfg. Co., Springfield, Ill.
Towsley Mfg. Co., John T., Cincinnati

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Avey Drilling Machine Co., Cincinnati

Punch Press Feeds

Rockford Iron Works, Rockford, Ill.

Punch, Shear and Bender, Hand

Armstrong Blum Mfg. Co., 341 N. Francisco Ave., Chicago

Punches, Hand

Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
Hendley & Whittemore Co., Beloit, Wis.

Leathwaite Mch. Co., T. H., 417 E. 31st St., New York
Whitney Metal Tool Co., Rockford, Ill.

Punches, Power

Hendley & Whittemore Co., Beloit, Wis.

Punches and Dies

Hendley & Whittemore Co., Beloit, Wis.
Leathwaite Mch. Co., T. H., 417 E. 31st., N. Y.
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Pyrometers

Wilson-Masulen Co., St. Marys St. & Concord Ave., New York

Racks, Bar Stock

New Britain Machine Co., New Britain, Conn.

Reamers

Cleveland Twist Drill Co., Cleveland, O.

Reamer Holders

Nicholson & Co., W. H., Wilkes-Barre, Pa.

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Cincinnati Specialty Mfg. Co., Cincinnati, O.

Riveting Machines

Grant Mfg. & Mch. Co., Bridgeport, Conn.

Rod Cutters

Armstrong-Blum Mfg. Co., 341 N. Francisco Ave., Chicago
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Leathwaite Mch. Co., T. H., 417 E. 31st., N. Y.
Tucker, W. C. & F. C., Hartford, Conn.

Saw Sharpening Machines

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Scraping Machines, Hand & Pneumatic

Anderson Brothers Mfg. Co., Rockford, Ill.

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Screw Machines, Automatic

New Britain Mch. Co., New Britain, Conn.

Second-Hand Machinery

American Tool Works Co., Cincinnati, O.
Badger-Packard Mch. Co., Milwaukee, Wis.
Bath & Co., Cyril J., Cleveland, O.
Bennett Mch. Co., 50 Church St., New York
Botwinik Brothers, New Haven, Conn.
Brown Machinery Co., St. Louis, Mo.
Brownell Machinery Co., Providence, R. I.
Cincinnati Automatic Mch. Co., Cincinnati
Clark Machinery Co., Cleveland, O.
Co-operative Machinery Co., Cleveland, O.
Davis, Hoy & Stumpf, 149 Broadway, New York
Donahue Steel Products Co., 204 N. Jefferson St., Chicago
Eastern Machinery Co., Cincinnati, O.
Emmerman & Co., Louis E., 1761 Elston Ave., Chicago
Essley Machinery Co., E. L., 555 Washington Blvd., Chicago
Fitzsimmons-Cole Mch. Co., Pittsburgh, Pa.
Harris Bros. Co., 35th & Iron, Chicago
Hill, Clarke & Co., 649 W. Washington Blvd., Chicago
Holmes Automobile Co., Canton, O.
Hyman & Sons, Joseph, Philadelphia
Johnson & Sons Machinery Co., Wm. C., St. Louis, Mo.
Jones Machine Tool Co., Cincinnati
Kinsey Co., E. A., Cincinnati, O.
Little Co., W. F., Cleveland
McCabe Lath & Machinery Corp., J. J., 149 Broadway, New York

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 McDonald Machinery Co., St. Louis
 Machine Tools Sales Co., Philadelphia, Pa.
 Murr-Galbreath Mch. Co., Pittsburgh, Pa.
 Marshall & Hushart Machinery Co., 17 S. Jefferson St., Chicago
 Mid-West Machine Tool & Supply Co., Davenport, Ia.
 Molitor Mch. Co., Chas., 118 S. Clinton St., Chicago
 Monarch Machinery Co., Philadelphia, Pa.
 Morey and Co., Inc., 408 Broome St., N. Y.
 National Mch. Mfg. Co., Inc., St. Louis, Mo.
 Niles-Bement-Pond Co., 111 Broadway, N. Y.
 Norton-Broadway Mch. Co., Cincinnati, O.
 O'Brien Machinery Co., Philadelphia
 Osborne Mch. Co., D. M., Cleveland, O.
 Osborne & Sexton Machinery Co., Columbus, O.
 Oriatt & Co., D. C., Cleveland, O.
 Patterson Tool & Supply Co., Dayton, O.
 Peninsular Machinery Co., Detroit, Mich.
 Randle Machinery Co., Cincinnati
 Reeve-Fritts Co., 37 S. Desplaines, Chicago
 Reliance Mch. Sales Co., Pittsburgh, Pa.
 Russell Machine Co., Pittsburgh, Pa.
 Simmons Machine Tool Corp., Albany, N. Y.
 Smith Machinery Co., H. A., Syracuse, N. Y.
 Standard Screw Products Co., Detroit, Mich.
 Stocker-Rumely-Waco Co., 117 N. Jefferson St., Chicago
 Stoehr Mch. Co., A. M., 844 N. Wells St., Chicago
 Strafer, A. F., 30 Church St., New York
 Strong, Carlisle & Hammond Co., Cleveland
 Syracuse Supply Co., Syracuse, N. Y.
 Tubor, Velick & Co., Inc., Lake & Desplaines Sts., Chicago
 Vandick Churchill Company, 52 Vosey St., New York
 Warner & Swasey Co., Cleveland, O.
 Winterer, Herman L., Philadelphia
 White Mch. Co., A. D., 108 N. Jefferson St., Chicago

Shafts, Flexible

Stow Flexible Shaft Co., Philadelphia, Pa.

Shafts, Steel

American Hollow Boring Co., Erie, Pa.

Shaping Machines

Osborne & Sexton Machy. Co., Columbus, O.
 Rhodes Mfg. Co., Hartford, Conn.
 Smith & Mills Co., Cincinnati
 Steptoe Co., John, Cincinnati, O.

Shears, Hand

Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
 Hendley & Whittemore Co., Beloit, Wis.
 Kidder Mfg. Co., J. F., Burlington, Vermont
 Lawthwaite Machine Co., T. H., 417 E. 31st St., New York
 Quickwork Co., St. Marys, Ohio
 Tucker, W. C. & F. C., Hartford, Conn.
 Whitney Metal Tool Co., Rockford, Ill.

Shears, Power

Hendley & Whittemore Co., Beloit, Wis.
 Quickwork Co., St. Marys, Ohio

Sheet Metal Working Machinery

Quickwork Co., St. Marys, Ohio

Slotting Machines

Rhodes Mfg. Co., Hartford, Conn.

Spacing Washers

Detroit Stamping Co., Detroit, Mich.

Stools and Chairs, Factory

Angle Steel Stool Co., Plainwell, Mich.
 Chicago Wire Chair Co., 619 N. La Salle St., Chicago

Straightening Machines

Towsley Mfg. Co., John T., Cincinnati
 Whitney Metal Tool Co., Rockford, Ill.

Stud Setters

Apex Machine Co., Dayton, O.

Tap Extractors

Walton Co., Hartford, Conn.

Tapping Machines and Attachments

Avey Drilling Machine Co., Cincinnati
 Hicknell-Thoman Co., Greenfield, Mass.
 Burke Machine Tool Co., Conneaut, Ohio
 Leland-Gifford Co., Worcester, Mass.
 Rickert-Shafer Co., Erie, Pa.
 Whitney Mfg. Co., Hartford, Conn.
 Whitney Metal Tool Co., Rockford, Ill.

Threading Tools

Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

Tool Holders

Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago
 Western Tool & Mfg. Co., Springfield, O.

Tool Racks

Chicago Wire Chair Co., 619 N. La Salle St., Chicago

Tools, Boring

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Tools, Lathe and Planer

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Tools, Machinists'

Armstrong Bros. Tool Co., 308 N. Francisco Av., Chicago

Tools, Spot Facing

Genesee Mfg. Co., Rochester, N. Y.

Travellers, I-Beam

Ford Chain Block Co., Philadelphia, Pa.

Trucks, Machine Shop

Angle Steel Stool Co., Plainwell, Mich.
 New Britain Machine Co., New Britain, Conn.
 Towsley Mfg. Co., John T., Cincinnati

Turntables

Canton Foundry & Machine Co., Canton, O.

Universal Joints

American Tool Works, Inc., Hartford, Conn.
 Apex Machine Co., Dayton, O.
 Borgeson Mfg. Co., Inc., Torrington, Conn.
 Boston Gear Works Sales Company, Norfolk Downs, Mass.
 National Automatic Tool Co., Richmond, Ind.

Valve Grinders

Independent Pneumatic Tool Co., 600 W. Jackson Blvd., Chicago

Valves

Powell Co., Wm., Cincinnati

Vises, Drilling Machine

Armstrong-Blum Mfg. Co., 341 N. Francisco Av., Chicago
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 Thomas Elevator Co., 31 S. Heyne Ave., Chicago

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New Britain Machine Co., New Britain, Conn.
 Parker Co., Charles, Meriden, Conn.
 Western Tool & Mfg. Co., Springfield, O.

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 New Britain Machine Co., New Britain, Conn.
 Porter-Cable Machine Co., Syracuse, N. Y.
 Towsley Mfg. Co., John T., Cincinnati
 Whitney & Son, Baxter D., Winchendon, Mass.

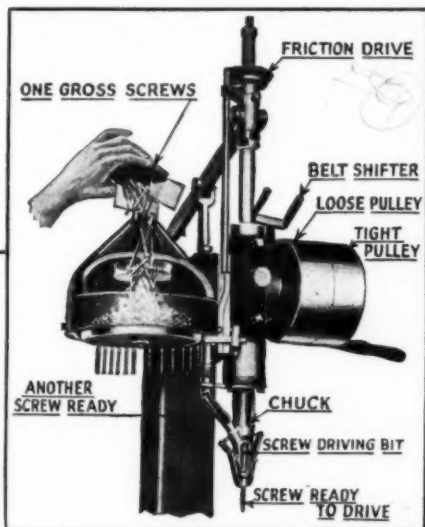
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Feed

SCREW DRIVING

Is Faster
Of Course



Showing the Magazine Feed of the Reynolds Automatic

Of course it's faster. The picture shows why.

It automatically saves motions—and time.

Easily drives 8,000 to 10,000 screws a day.

Tells us dimensions over all of your work, with gauge and length of screws, and we'll tell you how to reduce costs, *and back it up.*

The Reynolds Machine Company

Dept. H. H.,

Massillon, Ohio

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